

30 CENTS

Consumers' Research Bulletin



November 1953

Linoleum	5
--------------------	---

Men's Wrist Watches	10
-------------------------------	----

Photographic Equipment for Christmas	15
--	----

Anti-Freeze	26
-----------------------	----

FOR THE HOME

Low-Priced Postal Scales	17
Blackstone Automatic Washing Machine	19
Fire Extinguishers	23
Humidity in the Home	29

MISCELLANEOUS

Food Industry Adopts Sound Principles	9
Batteries and Their Guarantees	18
Quackery in Corrosion and Other Fields	21
New Device for Applying Adhesive	29
Cigarettes and Filters	30

FEATURES

Off the Editor's Chest	2
The Consumers' Observation Post	3
Brief Cumulative Index	28
Ratings of Motion Pictures	31
Phonograph Records—Walter F. Grueninger	35

Consumers' Research Bulletin

OFF THE EDITOR'S CHEST

WHEN you buy something that is "guaranteed," do you save a copy of the warranty and demand that its terms be fulfilled, if the product fails to live up to the promised performance?

There are so many types of guarantees being offered these days that the National Better Business Bureau has issued 18 suggested rules for advertisers which aim to protect consumers and keep the advertiser from getting into difficulties with the Federal Trade Commission. The rules range from suggestions that guarantees disclose their exact scope and the conditions under which they are operative to the warning that guarantees should comply with state and federal laws. Some state insurance departments prohibit certain types of guarantees unless the guarantor is licensed to conduct an insurance business.

One of the practices that consumers frequently complain about is that advertisers try to hedge on the "money back guarantee with no questions asked." As an advertising magazine pointed out, one way to engender bad feelings is to promise that "your money will be cheerfully refunded," unless the offer is frankly meant and will be sincerely carried out. Making it difficult to obtain a refund is an effective way for a manufacturer or dealer to lose friends.

One trade association has adopted a commendable policy for advertising copy which construes "guarantee" as follows: "the term 'guaranteed' when not qualified shall mean that satisfaction is guaranteed to the consumer and he shall be the judge."

The time factor is something of which all consumers should be wary. A most impressive certificate accompanied a brand of sunglasses which was headed "Your 100 year guarantee certificate." In endeavoring to collect on the guarantee about two years later, one unlucky purchaser had his letter of complaint returned labeled "addressee unknown." Further check on the outfit brought a form letter from a New York credit bureau with the report that the company was going through proceedings in the bankruptcy court.

One of the most unsuccessful experiences in the field of time guarantees encountered by many consumers was the "lifetime" guarantee of several fountain pens. The offer proved to be impractical of fulfillment and turned out to be a serious error from the financial standpoint; one which, according to an advertising

(Continued on page 20)



NOVEMBER 1953

VOL. 32 • NO. 5

Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries on tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR Bulletin. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

Scientific and Technical Staff and Editors: F. J. Schlink, R. Joyce, D. C. Aten, M. C. Phillips, Erma A. Hinek, F. X. Hinek, and A. R. Greenleaf. Editorial Assistants: Mary F. Roberts and B. Beam. Business Manager: C. D. Cornish.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; a quality judgment is independent of price; 52, 53—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least 5 weeks before it is to take effect, accompanying your notice with statement of your old address with name in full. At least a month's notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel. *CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

★★★For a brief cumulative index of the 1953 BULLETINS preceding this issue, see page 28.

CONSUMERS' RESEARCH BULLETIN, issued monthly by Consumers' Research, Inc. Editorial and Publication Offices at Washington, N. J.

Subscription price (12 issues), \$3 per year, U.S.A.; Canada and foreign, \$3.50. Single copy 30c. For libraries, schools, and colleges, a special subscription of nine monthly BULLETINS (October-June, inclusive) is available at \$2; Canada and foreign, \$2.50. *Responsibility for all specific statements of fact or opinion at any time made by Consumers' Research lies wholly with the technical director and staff of the organization. Entered as second-class matter November 9, 1934, at the Post Office at Washington, N.J., under the Act of March 3, 1879; additional entry at Easton, Pa. Copyright, 1953, by Consumers' Research, Inc., Washington, N.J. ••• Printed in U.S.A. ••• CONSUMERS' RESEARCH BULLETIN is on file in many school, college, and public libraries and is indexed in Industrial Arts Index and in the Readers' Guide to Periodical Literature. ••• Microfilm copies of complete volumes of CONSUMERS' RESEARCH BULLETIN can be purchased at \$1.50 per volume (beginning with the 1949 volume). Orders for the microfilm edition, which is available only to regular subscribers to the monthly issues of CONSUMERS' RESEARCH BULLETIN, should be sent to University Microfilms, 313 North First St., Ann Arbor, Mich.

Note: The material in this BULLETIN is protected by copyright. Reprinting is often allowed, when special permission has been asked and granted in writing. Use of CR material for any advertising purpose is not permitted.

The Consumers' Observation Post

NEW RATES ON AUTOMOBILE INSURANCE have recently gone into effect in many sections and will in due course apply throughout the country. On a dollars-and-cents basis, the cut in insurance cost for adult pleasure car drivers will be up to 15 percent, while the young owner-driver with uncontrolled use of a car will pay two and a half times the rate charged the best risks, reports The New York Times. The new and complicated formula for calculating rates provides for seven classifications of private cars instead of the three that were in effect previously. One announced purpose of the new scale of rates is to encourage the use of mass transportation facilities near big cities by levying higher rates on those who drive their cars to work. Somewhat unhappy will be those motorists in the suburbs and outlying sections who normally drive to railroad stations; they will not receive any reduction from rates previously in effect. Indeed, the rates have gone up for those who drive more than 10 miles to the station.

* * *

WHEN NYLON IS BLENDED with wool or cashmere even in amounts as small as 5 percent, it must be declared on the label. An official of the Federal Trade Commission called attention of manufacturers of wool fabrics to the fact that blending a small amount of nylon with wool and marking the finished product "100 percent wool" is considered misbranding. Where the percentage of nylon is less than 5 percent, it may be designated as "other fiber."

* * *

THE EFFECT OF TELEVISION PROGRAMS on children with the heavy emphasis on crime, horror, and violence is a matter of increasing concern to many thoughtful parents. In an enlightening article, "Can the Kids Take TV?," Dr. Ruth A. Inglis, writing in the American Legion Magazine, points out that children listen to and look at adult programs whether they are suitable or not. She notes that the use of old "Grade B" movies is a source of much complaint, quoting one parent as saying: "We wouldn't pay to see them ten or fifteen years ago—now we are plagued with them daily." Aside from turning off the set, Dr. Inglis suggests that a letter to the Television Code Review Board, 1771 N St., N.W., Washington 6, D.C., giving the day, the hour, the name of the show, and specifically just what is considered offensive in the program may have some corrective effect. Be sure that a copy of your letter goes to the president of the company sponsoring the product, and one also to the local station over which the program is channeled.

* * *

PUFFED AND EXPLODED BREAKFAST CEREALS came in for criticism from a Scottish scientist recently. At a meeting of the British Association for the Advancement of Science, Dr. David Paton Cuthbertson presented a study from which the conclusion was drawn that methods of processing more drastic than baking seriously impair the nutritional value of protein in cereal for human beings unless the deficiency is corrected by adding lysine. Lysine is one of the essential amino acids which are the building stones of living material. It is particularly susceptible to damage by heat.

* * *

THE BATTLE OF THE TOOTHPASTES continues, with another "miracle-working" ingredient making its appearance in full-page advertisements. The current wonder-worker that follows the previous much-touted ammonium ion and chlorophyll is a group of anti-enzyme chemicals, called sarcosinates. The theory behind the new product, reports an advertising journal, is that decay acids are formed when bacteria in the mouth attack carbohydrates in the food eaten and the enzymes in the bacteria convert carbohydrates into decay acids. The anti-enzyme chemical in the toothpaste will, so the argu-

ment goes, block the enzymic action, hence prevent decay acids from forming. Skeptical consumers will be interested to know that the American Dental Association has not yet been convinced of the importance of the new discovery, holding that the claims for reduction of tooth decay by anti-enzymes are premature. The Food and Drug Administration is reported to be considering a crack-down on such therapeutic claims for an ingredient that has not been approved as a new drug.

* * *

PRICE-CUTTING ON TELEVISION SETS is such a common occurrence that the customer in most sections of the country never expects to pay list price. According to Television Retailing, a survey in the New York area indicated that when a prospective customer asked a dealer the price of a particular set, the immediate answer was "We'll sell it to you cheaper." It is well to remember that installation and servicing are an important factor in the effective performance of a TV set, and the amount saved on the purchase of a set at a discount may in some cases be more than offset by the charges made for installation and a servicing contract with a local serviceman or dealer for handling a set on which he has not made a profit.

* * *

PLASTIC TOYS MAY BE ATTRACTIVE and inexpensive, but they are difficult to mend. When toy fire engines were made of tin and doll furniture made of wood, they could be repaired if broken, but you can't solder or glue certain plastics, complains a midwestern newspaper. Perhaps toys are so numerous and cheap that children don't mind discarding them when they are banged up, but, as one chemical journal points out, there are some toys for which plastics are definitely not suited, such as all-plastic pistols that shatter after a few dozen clicks and plastic bow and arrow sets with poor resilience. The journal's editor deplores the tendency to make toys that are just good enough to "hold together until the kids get home."

* * *

THAT SECONDHAND AUTOMOBILES are not selling rapidly is obvious to anyone passing a used car dealer's lot. Just what is the explanation for the huge stocks of used cars is not clear, but one economic analyst, M. S. Rukeyser, suggests that there is too much of the spirit "let the buyer beware" in the field. He makes the suggestion that the log jam could be broken by a bold new policy on the part of auto manufacturers. His idea is that the manufacturers would arrange to take a certain percentage of used cars back to the factories for rebuilding and replacement of all worn parts—which can be much more economically handled at the factory than by a local mechanic. Such cars would be given a factory guarantee comparable to that now provided for new cars. The discriminating buyer would be willing to pay more for such a car and at the same time obtain efficient means of transportation at a figure that he can better afford than the price of a new automobile. The proposal undoubtedly represents a sounder approach than merely continuing to ballyhoo the current advertising slogan, "Everyone drives a used car."

* * *

BRIEF, BUT SIGNIFICANT ITEM from the American Legion: "Be It Resolved, That The American Legion in convention assembled in St. Louis, Missouri, August 31 to September 3 [1953], go on record that we are unalterably opposed to Consumers Union and to its publication, Consumer Reports." As we pointed out in Consumers' Research Bulletin, July 1953 (p. 21), it is important that Consumers' Research should not be confused with this or any other publication or organization.

* * *

THE NEW DYNEL FLEECE COATS present something of a problem in cleaning. Special care must be taken by the dry cleaner to avoid flattening the nap permanently by steaming and brushing, according to advice issued by the National Institute of Drycleaning. The NID has also discovered that some dynel fleece coats have made their appearance on the market without an identifying label so that the dry cleaner has no warning that a particular

(The continuation of this section is on page 33)

CR Tests 19 Standard- and Light-Gauge

Linoleums

THERE is no question about what a woman wants when she is buying any new floor covering. She wants one that is attractive, easy to stand on and walk on, and easy to care for and to keep clean. It should also wear well, and retain its good appearance. Floor coverings like linoleum, called smooth-surfaced floor coverings by the trade, have a combination of these desirable properties that make them increasingly popular. Furthermore, the type of construction in many new homes where there are large open areas and few partitions often makes this kind of floor covering a good choice. Wall-to-wall carpeting, which also looks well in such homes, is too expensive for many householders, and has a number of disadvantages for use in some rooms in the home.

There are many different smooth-surfaced floor coverings on the market. In order of decreasing sales these are: printed "felt-base" floor covering, linoleum, asphalt tile, plastic, rubber tile, and cork tile. Printed floor covering is considerably less expensive than any of the others, but it has poor durability, which makes it an unwise purchase where service is at all severe.



The samples of linoleum on CR's abrasion (wear) testing machine.

Some people, nevertheless, prefer to buy the printed felt-base product because its price per square yard is small compared with that of the other smooth-surfaced floor coverings, and it can be replaced at minimum expense when a different color or design is wanted. Printed felt-base floor covering is easily differentiated from linoleum and plastic which it resembles, by its construction, as it comprises a very thin surface coating on "felt" back; sometimes the surface layer is simply painted onto the base material.

As to the other floor coverings, light-gauge linoleum and standard-weight asphalt tile are the lowest in price per square yard; standard-gauge linoleum, inlaid plastic, and greaseproof asphalt tile are next; heavy-gauge linoleum is next, and rubber tile, solid plastic, and cork tile are in the highest cost bracket.

All of these flooring materials are satisfactory for use on off-the-ground radiant-heated floors, according to the trade, although they differ in their ability to conduct heat. The most efficient in this respect is reported to be rubber tile; asphalt tile is second, then plastic and linoleum, and, least efficient, cork tile. On concrete slabs that are on grade or below grade in direct contact with the ground only asphalt tile should be installed. Linoleum can be used successfully on any type of floor that is off the ground.

A floor covering that is easy to stand on and walk on is resilient; that is, it will compress somewhat when weight is applied to it, and return to its original thickness when the weight is removed. The ability of a floor covering to compress under pressure will become a disadvantage, of course, unless the indented area returns practically to its original height after the weight is removed. Unfortunately, a highly compressible linoleum will retain indentation marks because it does not return to its full original thickness, and it is necessary therefore to accept a compromise between the two characteristics.

A number of years ago the National Bureau of Standards made a series of tests on 64 different floor coverings, including wood, cement composition, asphalt tile, linoleum, cork, and rubber, and found that the indentation characteristics of felt-base floor coverings were on the whole not desirable. They were found to have a fair "comfort value," that is they would be comfortable to walk on, but the dents which were made when weights were applied (as from a heavy chair or table) remained in the flooring to an undesirable extent. In use, this would mean that there would in time be unsightly indented places which would eventually require replacement of the floor covering. In general, it was found that most of the linoleums the Bureau tested had a fair to good combination of the two properties of initial indentation and residual indentation.

Some of the heavy electrical appliances used today emphasize the importance of the indentation characteristics of floor coverings. Roll-away appliances like dishwashers and washing machines will leave unsightly marks if the floor covering does not have sufficient resistance to indentation. As a matter of fact, in homes where heavy appliances on casters are in regular use, proper resistance to permanent indentation may well be the most important single characteristic needed in the floor covering.

In some instances quietness should be considered in choosing a smooth-surfaced floor covering. Linoleum is not the most quiet—cork tile and rubber tile are superior to it. It is, nevertheless, better in respect to noise than asphalt tile. The backing on the linoleum contributes to its noise-deadening properties as well as to its resilience and comfort.

In CR's study, tests were made to determine the various properties which were judged to be of greatest importance in the selection of any smooth-surfaced floor covering. Samples were purchased in green and cream marbled patterns, since these are reported to be the best sellers. Standard-gauge and light-gauge linoleums were tested. Standard gauge, which sells at about \$2.25 a square yard, and light-gauge linoleum, which costs from 15 to 40 percent less, are used primarily in residences where the foot traffic is likely to be about average. Heavy-gauge linoleum, sometimes called battleship linoleum, was not included in the study as it is seldom used in homes. Standard-gauge linoleum is about 3/32, light gauge about 5/64 inch thick. In any particular brand, this difference in thickness (1/64 inch) usually represents the difference in the thickness of the linoleum composition, since the thickness of backing materials is usually

the same. The samples of standard-gauge linoleum in this study weighed from 4½ to 6 pounds per square yard. The light-gauge linoleums weighed from 3½ to 4 pounds per square yard.

All the samples tested were checked for pliability in both lengthwise and crosswise directions—an indication of how well they would withstand the folding and bending likely to take place when they were laid. None of the samples cracked on the top surface when they were bent over a two-inch mandrel, but the backing cracked or buckled on at least one sample of all the *Nairn* and *Sears*' linoleums tested. This could present a problem in laying linoleum because a cracked or buckled backing would make it difficult to get the necessary smooth even surface, and proper bond to the floor.

The indentation characteristics of the floor coverings were determined by tests in which loads of 25 and 100 pounds were applied by a ¼-inch diameter rod. Though this weight may seem high, it has been shown that it is not greater than the stress in pounds per square inch imposed by a particle of gravel on which a person is standing or that applied through a chair leg which is not standing squarely on the floor.

In the indentation tests, the initial indentation was measured 30 seconds after the application of the 25-pound load, and was used as an approximate indication of the comfort value of the floor coverings with respect to the physical fatigue of those walking on it. The residual indentation was measured 120 minutes after the removal of a load of 100 pounds which had been applied for 30 minutes. The residual indentation is useful in showing the relative extent to which floor coverings are likely to be permanently indented by a concentrated load due to a heavy table or appliance, for example. (See the graph, page 7.) On the light-gauge linoleums, the residual indentations ranged from 8 to 18 thousandths of an inch. The residual indentations for the standard-gauge linoleums ranged from 6 to 17 thousandths of an inch. Visual observations made during the study indicated that indentations of about 10 thousandths of an inch were sufficiently noticeable to be objectionable.

To check the ease of maintaining the linoleums, samples, in an as-received condition and after being abraded to remove surface finish, were subjected to a number of common household cleaners and other household chemicals. These chemicals included *Tide*, *Oxydol*, *Oakite*, *Glim*, *Calgonite*, *Sani-Flush*, household ammonia, *Clorox* (sodium hypochlorite bleach), white vinegar, lemon juice, merthiolate (*Lilly*), mineral oil, *Mazola* (corn) cooking oil, ink, and urea. The only chemicals that produced definitely undesir-

able effects were ammonia, *Clorox*, and *Glim*. All samples tested were marked in some way by *Clorox* and *Glim*, and all but five, *Nairn* light green, *Pabco* standard green, *Sears' Harmony House* standard and light green, and *Sloane* standard cream, by household ammonia.

Two different abrasion (wear) tests were applied to the linoleums in the study. Samples of the various brands were placed on sections of circular tracks on two abrasion testing machines of CR's design. Other samples were laid in a foot-traffic area and changed in position at regular intervals so that each sample would get approximately the same wear. A photoelectric counter showed that the samples were traversed approximately 375 times a day.

The results of these tests indicated that, for the most part, differences between linoleums in resistance to abrasive wear are not great. Of the 19 samples tested, only five had wear characteristics that were different to a significant degree from the others. Three of these were noticeably more resistant to wear; five were somewhat poorer than the others.

The appearance of all the standard-gauge samples at the end of the abrasion tests was good; on the *Bonnie-Maid* 'green, however, the pattern was somewhat blurred, so that it showed definite effects of the wear. In general, all the light-gauge linoleums had a less desirable appearance than the standard-gauge linoleums at the end of this test; the two *Armstrong* light-gauge linoleums were judged to have a good appearance and were superior to the other light-gauge samples in the test.

One important conclusion to be drawn from the series of tests to which Consumers' Research subjected all the samples is: linoleum makes a good floor covering for any room where the wear is heavy and where spotting and staining present a problem.

The ratings of linoleums take into consideration all factors included in this test. If resistance to abrasion or to permanent indentation under a concentrated load, or comfort underfoot is a primary consideration, consumers should be guided by comments regarding these specific factors, in each listing.

A. Recommended

Standard Gauge

Armstrong's Marbelle, No. 08 (Armstrong Cork Co., Lancaster, Pa.) \$2.25 a sq. yd. Green marbled.

Performance in test:

Comfort value (yielding to the foot), fair; resistance to permanent indentation, good; resistance to abra-

COMFORT VALUE	VERY GOOD				
	GOOD				
	FAIR			j k p q	
	POOR	g	b d e	c f h i n o r s	
	VERY POOR		a l m		
		RESIDUAL INDENTATION			
		VERY GOOD	GOOD	FAIR	POOR

Graph Showing Results of Indentation Test

The comfort value (initial indentation) is an indication of the ability of the linoleum to yield (and to be comfortable) underfoot.

The residual indentation is an indication of the ability of the linoleum to resist indenting by a concentrated load.

In this chart the linoleums are evaluated according to a scheme devised by the Bureau of Standards in a study which included floorings of cement composition, wood, asphalt, linoleum, cork, and rubber. Cork would lie in the upper right-hand square, with a very good comfort value and a very high (poor) residual indentation; cement mortar would lie in the lower left-hand square, with a poor comfort value and a very low (good) residual indentation.

The differences between the evaluations expressed in the listings which follow and those shown in the above graph are accounted for by the fact that the evaluations in the listings are based on a comparison between the indentation characteristics of each sample and those of the other linoleums included in the test.

Identification of samples: **a**—Armstrong's Standard Gauge, cream; **b**—Armstrong's Standard Gauge, green; **c**—Armstrong's Light Gauge, cream; **d**—Armstrong's Light Gauge, green; **e**—Bird's Standard Gauge, cream; **f**—Bonnie-Maid Standard Gauge, cream; **g**—Bonnie-Maid Standard Gauge, green; **h**—Nairn Standard Gauge, cream; **i**—Nairn Standard Gauge, green; **j**—Nairn Light Gauge, cream; **k**—Nairn Light Gauge, green; **l**—Pabco Standard Gauge, cream; **m**—Pabco Standard Gauge, green; **n**—Harmony House Standard Gauge, cream; **o**—Harmony House Standard Gauge, green; **p**—Harmony House Light Gauge, cream; **q**—Harmony House Light Gauge, green; **r**—Sloane Standard Gauge, cream; **s**—Sloane Standard Gauge, green.

sion, fair; resistance to damage by household cleaners and chemicals, good.

Bird's No. 0209 (Bird & Son, Inc., East Walpole, Mass.) \$2.25 a sq. yd. Cream marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, good; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good.

Bonnie-Maid, No. 107 (Bonafide Mills, Inc.) \$2.25 a sq. yd. Cream marbled.

Performance in test:

Comfort value, fair; resistance to permanent in-



The beginning of the residual-indentation test. The weight is applied for 30 minutes.

dentation, fair; resistance to abrasion, good; one of three best tested in this study; resistance to damage by household cleaners and chemicals, good.

Bonnie-Maid, No. 153 (Bonafide Mills, Inc., New York City) \$2.25 a sq. yd. Green marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, very good; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good.

Pabco Inlaid, No. 8562 (Paraffine Co.'s, Inc.) \$2.25 a sq. yd. Green marbled.

Performance in test:

Comfort value, poor; resistance to permanent indentation, good; resistance to abrasion, good, one of the three best tested in this study; resistance to damage by household cleaners and chemicals, good.

Sloane-Delaware, No. 321 (Sloane-Delaware Floor Products, Trenton, N.J.) \$2.25 a sq. yd. Green marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, good, one of three best in this respect; resistance to damage by household cleaners and chemicals, good.

Light Gauge

Armstrong's Marbelle, No. 08 (Armstrong Cork Co.) \$1.88 a sq. yd. Green marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, good; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good.

B. Intermediate

Standard Gauge

Armstrong's Marbelle, No. 015 (Armstrong Cork Co.) \$2.25 a sq. yd. Cream marbled.

Performance in test:

Comfort value, poor; resistance to permanent indentation, good; resistance to abrasion, fair; resistance to damage by household chemicals, good.

Nairn, No. V602 (Congoleum-Nairn, Inc.) \$2.25 a sq. yd. Cream marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good. Backing was buckled, and cracked in pliability test.

Nairn, No. V606 (Congoleum-Nairn, Inc.) \$2.25 a sq. yd. Green marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good. Backing was buckled, but did not crack, in pliability test.

Pabco, No. 8512 (Paraffine Co.'s, Inc., Fourth and Brannan, San Francisco) \$2.25 a sq. yd. Cream marbled.

Performance in test:

Comfort value, poor; resistance to permanent indentation, good; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good.

Harmony House (Nairn), No. V637 (Congoleum-Nairn, Inc., Kearny, N.J.; bought in Sears' retail store) \$1.98 a sq. yd. Cream marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good. There was buckling and cracking of the backing in pliability test.

Harmony House (Nairn, Gold Seal) Standard Gauge, No. V606 (Congoleum-Nairn, Inc.; bought in Sears' retail store) \$1.98 a sq. yd. Green marbled.



The end of the residual-indentation test. The depth of the indentation is measured 2 hours after the weight is removed.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good. Backing was buckled and cracked in pliability test.

Sloane Linoleum, Standard Gauge, No. 0135 (Sloane-Delaware Floor Products, Inc.) \$1.50 a sq. yd. Cream marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, poor; resistance to damage by household cleaners and chemicals, good

Light Gauge

Armstrong's Marbelle, No. 015 (Armstrong Cork Co.) \$1.88 a sq. yd. Cream marbled.

Performance in test:

Comfort value, fair; resistance to permanent indentation, fair; resistance to abrasion, fair; resistance to damage by household cleaners and chemicals, good.

Harmony House (Nairn, Gold Seal), Light Gauge (Congoleum-Nairn, Inc.; Sears-Roebuck's Cat. No. 696) \$1.38 a sq. yd., plus shipping charges. Cream marbled.

Performance in test:

Comfort value, good; resistance to permanent in-

dentation, fair; resistance to abrasion, poor; resistance to damage by household cleaners and chemicals, good. Backing on one sample was buckled, but did not crack in pliability test.

Harmony House (Nairn, Gold Seal) Lightweight (Congoleum-Nairn, Inc.; Sears-Roebuck's Cat. No. 696) \$1.38 a sq. yd., plus shipping charges. Color J, green marbled.

Performance in test:

Comfort value, good; resistance to permanent indentation, fair; resistance to abrasion, poor; resistance to damage by household cleaners and chemicals, good. Backing on one sample was buckled, but did not crack, in pliability test.

Nairn, Gold Seal No. 402 (Congoleum-Nairn, Inc.) \$1.39 a sq. yd. Cream marbled.

Performance in test:

Comfort value, good; resistance to permanent indentation, fair; resistance to abrasion, poor; resistance to damage by household cleaners and chemicals, good. Backing on one sample was buckled, but did not crack, in pliability test.

Nairn, Gold Seal No. V422 (Congoleum-Nairn, Inc.) \$1.39 a sq. yd. Color K, green marbled.

Performance in test:

Comfort value, good; resistance to permanent indentation, fair; resistance to abrasion, poor; resistance to damage by household cleaners and chemicals, good. Backing was buckled, but did not crack, in pliability test.

Food Industry Adopts Sound Principles

WE are pleased to note that the American Bakers Association have issued a Statement of Principles, reported in Chemical Week of May 9, 1953, which reflects a very desirable degree of responsibility toward the vital questions of public health and consumer safeguards involved in the choice of ingredients of commercially manufactured foods.

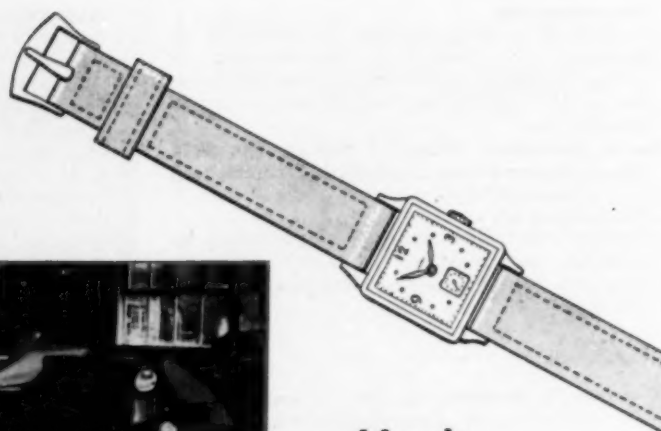
In summary, the principles established by the Association and adopted by its Board of Governors in 1952, hold that the food industry should bend every effort toward production and distribution of foods which are beneficial and nutritious and assure adequate safeguards against contamination or adulteration; to improve wholesomeness, palatability, and convenience, but, in so doing, public health and welfare should be a first consideration; that where substances are involved that have not been tested by long usage in human diet, there should be animal experimentation to prove that their use in food does not present a hazard to public health; that there should be adequate pre-testing, required by law, of every new substance proposed for use

in human food; that the pre-testing should be reviewed and approved before new substances are permitted to be sold to the public; and, finally, that the Food and Drug Act should be amended to provide adequate law to prevent the addition of unusual substances to foods on which standards have not yet been promulgated.

CR learns that in essence the principles set forth in the foregoing have been adopted by the following food industries associations in addition to the American Bakers Association: American Institute of Baking, American Meat Institute, Dairy Industry Committee, American Farm Bureau Federation, Institute of Shortening and Edible Oils, National Restaurant Association, and Millers National Federation. All of these associations have accepted the principles that all new food additives should be adequately pre-tested by the manufacturer or the using industry and that the Food and Drug Administration must approve the use of the new additives before they are employed in commercially manufactured foods.



Tuning-fork-controlled Watch-Rate Recorder used in testing wrist watches at Consumers' Research.



Men's Wrist Watches

Many readers will be interested in the results of the timing tests of watches reported in this article. Quite likely, too, there will be readers who are familiar with the general judgments of the watch trade and many jewelers with a prejudice in favor of or against particular makes who will not consider the findings dependable because they go against the settled opinions of themselves or other persons in the trade as to the merit of certain brands. The reason jewelers often give a high rating to a particular watch with a famous name or one having a reputation for superior performance is not that those concerned have made or published comparative tests of the famous watch with others of lower price and standing, but merely that people in the trade have come to accept it as superior, on the basis of very effective and persuasive advertising and salesmanship. People in the trade have strong prejudices in this respect, and it will be many years before they will be inclined to accept the fact that a watch they have long thought to be of ordinary quality is actually one of the best on the market. The personal opinions of jewelers do not ordinarily warrant being given weight in a matter of this kind except as proven by comparative technical tests of samples taken at random from stock under controlled conditions by a disinterested authority. Neither is the apparent time-keeping performance of a watch on a consumer's wrist the final answer, for a watch will often seem to give satisfactory performance over a period of days or weeks, whereas its hour-to-hour variations from correct time will have been substantial.

We shall be glad, if there is any watch manufacturer who would like to see additional tests made on his brand, to make arrangements by which such tests can be carried out if the manufacturer will agree in advance to authorize any or all of a number of jewelers who carry a sizable stock of his make to furnish samples on a loan basis to CR for the tests; provided further that the watches to be furnished will be on a strictly random basis, and exactly as such watches would be found by the average consumer in jewelers' stocks, without selection or special adjustment of the watches to be tested.

THE 56 men's wrist watches included in the present test represent some of the most widely advertised and sold brands in the lower and middle price brackets of jeweled American and Swiss lever-movement watches. The makes include the well-known *Elgin, Longines, Hamilton, Bulova, Rolex*, and a number of less well-known but representative brands.

The tests were made on the *WatchMaster* Watch-Rate Recorder, an electronic timing device, made by American Time Products, Inc., 580 Fifth Ave., New York 19. This is the instrument which is widely used by watch factories and by watchmakers in the better jewelry stores in checking the rate, or accuracy of timekeeping, of watches being manufactured, adjusted, and sold, or undergoing repair or timekeeping adjustments for the jewelers' customer. The instrument measures the amount by which a watch is running fast or slow in any selected position, within a few minutes, and by applying the test at different intervals from the time the watch was wound, it gives quickly the general or over-all timekeeping performance. The watch-rate recorder also performs an invaluable service to the watch adjuster or repairman in indicating defects in the watch mechanism, defects which are often difficult to observe directly because of the smallness of the parts and the delicacy of the manual manipulations that would be required to measure directly the parts, clearances, and motions involved. Thus the *WatchMaster* will indicate such defects as wheels that do not run quite true, a defective gear tooth, a balance that does not have a large enough angle of swing, a hairspring which has been bent or incorrectly adjusted. Sample charts from the *WatchMaster* are reproduced to show the nature of the records which it makes of watches giving good and poor performance.

As in the test reported in the February 1952 BULLETIN, the findings indicate that some watches having high reputations for good performance did not excel watches that are commonly regarded as of medium or ordinary grade, in timekeeping accuracy and reliability. Many of the most responsible jewelers check the condition of a watch before it is delivered to the customer. If the watch the customer selects does not run or if it runs decidedly fast or slow (or irregularly because of the stiffening or deterioration of the oil), the dealer will ask permission to retain the watch for a time for cleaning or re-oiling, or perhaps to make a small adjustment in the timing by use of the regulator. The better dealers will often clean, oil, and regulate a watch (particularly if it is a small one) that has been in stock for six months or more,

before it is delivered to the customer. (A watch is more likely to develop irregular timekeeping characteristics when it is kept in stock unused, than if it is being worn and used for the same length of time.)

Especially with small watches, there is a considerable variation in the timekeeping quality of individual movements, which arises chiefly because the parts are extremely small and call for exceedingly close fitting and adjustment; even slight variations in the lubrication which develop with time, whether the watch is used or not, will affect timekeeping accuracy. The very small watches are particularly at a disadvantage in hot climates, or near the seashore, or in places where humidity is high, or if carried in a woman's handbag.

It is evident that the actual timekeeping performance of a particular watch is determined by a large number of factors, some of which cannot be kept under constant close control; on that account, it is especially important that the consumer should buy from a dealer who *will accept responsibility to see that the watch he sells is in good running order and gives accurate and steady performance* before the sale becomes final.

Because of the very large number of brand names which exist in the watch trade (there are around 3600 watch names in a recent trade list, of watches made or marketed by over 200 distributors and three American manufacturers), it is wholly out of the question to provide anything even approximating complete coverage of the various makes and qualities of movements. It is a startling fact little known to the ultimate consumer that to a very large extent the buying of a watch is the buying of brand names, for a well-known, well-advertised name may add as much as \$100 to the price of a watch without adding additional quality. It is also true that for 99 percent or so of consumers, everything needed in a watch—except perhaps top style, beauty, and exclusiveness of case—can be gotten in watches in the \$30 to \$50 bracket. (Occasionally a watch priced as low as \$20 to \$25 will perform well, e.g., Sears-Roebuck's *Orvin*.) More money will, of course, get you more ornamental value and exclusiveness, but it will get little more in the way of fine or lasting timekeeping qualities. It is a point of interest to consumers that in the current test the four watch samples that gave the poorest timekeeping performance were in the \$50-and-over price class, while a considerable proportion of those found best in timekeeping performance were priced under \$50 or not far above that figure.

Anyone wanting the most for his money should always buy a watch in a "stainless" or other base-

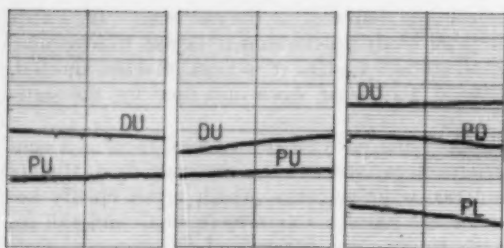


Figure 1—Chart-records of three watches having good timekeeping qualities. These patterns, recorded by an electronic instrument called the WatchMaster Watch-Rate Recorder, consist of small dots, each dot corresponding to one tick of the watch. The lines are straight and continuous when the watch is inherently a good timekeeper, horizontal when the watch is correctly regulated. The watch ticks are picked up by a sensitive microphone, amplified by vacuum tubes, and recorded as dots imprinted on a chart paper wrapped around a drum rotating at an accurately constant speed of 5 revolutions per second. Each vertical division on the chart is equivalent to a deviation from accurate timekeeping of 5 seconds in 24 hours; when the line rises, the watch is running fast; when it slopes downward from left to right, the watch is losing time.

The three patterns above are typical of very good used watches in very good adjustment; they were obtained with the watches in the position as marked: dial up (DU), pendant up (PU), pendant down (PD), pendant left (PL).

Left: A 17-jewel 18-size "hunting case" Chas. Tissot Faure (Swiss) watch of unusually fine type and workmanship, over 50 years old, which has not been cleaned or adjusted for many years.

Middle: A 16-size Illinois railroad watch adjusted to 6 positions, also not cleaned or oiled for some years. (The better pocket watches, 12, 16, or 18 size, often keep accurate time for many years without cleaning or adjustment.)

Right: Man's Hamilton 17-jewel wrist watch about 6 years old—an unusually good pattern for a wrist watch; wrist watches do not often give timekeeping comparable with first-class pocket watches, especially when they have not been recently cleaned and oiled.

metal case. A wrist watch in a solid gold case may, for example, be priced \$150 higher than one in an ordinary filled or stainless-steel case; the difference is not in the value of the gold or platinum that may be involved, for the bullion value of the gold would be only about one-tenth of the extra price paid for a watch in a solid gold case. Considering the short life of wrist watches, and the chances of loss, or damage by accident or immersion, many men would do well to buy the movement of their choice in the lowest price case that is satisfactory from the standpoint of appearance.

One should remember, in purchasing any luxury watch, in the range of \$200 to a thousand dollars or more, that the timekeeping accuracy is not likely to be extraordinarily good. The best watches of "standard" grade keep time about as well as anyone needs in today's busi-

ness or social life, and, besides, the finest watches will at best retain their original superior timekeeping qualities for only a matter of a few months. Top-grade watch movements are particularly subject to injury by hard use or abuse (or by the ministrations of a careless or incompetent repairman); furthermore, the charge for repairing a watch of extra-fine grade or exceptional type will often be much higher than for corresponding work on a "standard" watch. In general, one should not expect wrist watches of good size to run reliably closer than about one or two minutes a day. (The timekeeping error will be larger, and more variable, with smaller watches.) A wrist watch keeping time regularly within $\frac{1}{2}$ minute a day would be considered an exceptionally good performer.

Wind a watch fully once a day—at about the same time of day (morning is best for most persons). Jewelers have much trouble with customers who blame a watch for stopping after a few hours, when there is nothing wrong with it other than its not having been completely wound.

The wise buyer will avoid watches of abnormal design or type, partly because such watches have poor resale value, in case one should want to recover some of the amount paid, and partly because some of the special features may involve difficulties and expense when repair is necessary. For this reason, it is best to avoid chronograph and other complicated-movement watches unless the features are really needed; chronograph

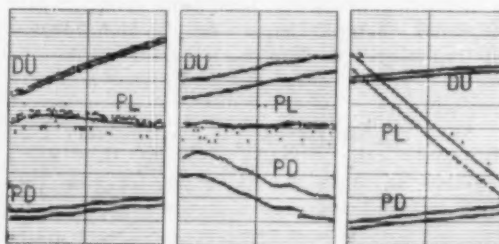


Figure 2—The charts shown above give the records for three positions of three men's wrist watches of different makes (two Swiss, one American) purchased 9 months to a year previously. Note that the timekeeping rates, especially for the third watch, vary to a marked extent with the position of the watch, a common fault with watches of poor quality, or watches that have been injured by a severe jolt or a fall, or thrown out of factory adjustment by a careless or unskilful repairman. The positions as marked are: dial up (DU), pendant left (PL), and pendant down (PD). The straight, even lines for the third watch indicates that it is capable of good timekeeping in all positions if adjusted and regulated by a skilled and careful repairman. The double lines seen on the record of these three watches indicate an error of adjustment in that the watches are "out of beat" (ticks and tocks unevenly spaced in time). Compare the record lines of Figure 1, where ticks and tocks fell on a single line.

movements are very expensive to clean, repair, and adjust, and very often must be sent away to a watchmaker who is a specialist in complicated movements. The better self-winding watches, reported to be selling about as well as the regular wrist watches, are now on the whole a safe buy; it is not usually wise, however, to buy a self-winding watch in the lowest price bracket, or one of an unknown or little-known make. Cleaning a self-winding watch will often cost a dollar or two more than a corresponding job on a regular wrist watch.

For the best timekeeping at the least cost, pocket watches are best, although they are a fast disappearing item with many dealers. Wrist watches, even high-priced ones, are subject to large errors due to the changes of position that occur when a watch is worn, or laid on a table during the night; likewise errors that depend on whether the mainspring is fully wound or partially unwound (isochronism). For a number of reasons, wrist watches are unlikely to have the long life expected from a jeweled pocket watch of reputable make.

The useful life of the small jeweled wrist watches commonly bought by women is particularly short, perhaps only one to five years, and such watches are therefore to be regarded as luxury items. While no women's watches were included in the present test, it is reasonable to assume that in a good many cases the manufacturers who have made good men's watches will also carry over their skill and competence in a relative sense to the smaller wrist watches used by women. It is best by all means to buy one of the *larger* women's wrist watches whenever the user has no objection to a good-sized watch from the standpoint of appearance.

It is well to bear in mind that no brand name can itself guarantee quality *in each and every movement* of a given maker. On the other hand, it is certainly unwise to buy a watch of an unknown or little-known brand name, particularly from department stores, which often advertise "tremendous values" in sales of unidentified makes of watches. The fact that the department store watches are sold by ordinary sales people and not persons who know and understand watches also puts the buyer at a disadvantage in case it should be necessary for him to seek adjustment or replacement when after a time his watch has stopped or performs irregularly. It is best not to buy from dealers whose watch advertising does not clearly state the brand or make, or if the dials of the watches do not show a brand name that is well known and recognized.

The movements in the lowest-priced watches

are of the kind of construction which resembles the alarm clock (or the so-called dollar watches of the past generation)—a type of movement known as the pin-lever, and while the best of the cheap watches may have a good appearance and even keep fairly good time for a while, their purchase involves a risk in that when such a watch becomes unreliable or inaccurate, it will rarely be practical or worth while to have it cleaned or repaired. Such a watch has its place for farmers, truckmen, and others who do heavy work where an expensive watch would be subject to daily risk of loss, shock, or breakage, but on a cost-per-year basis, the pin-lever, lowest-priced watches are not an economy for most users. (No watches of this type were included in the present test.)

The claim that a certain watch is a "precision" timekeeper should be given no weight at all, for that word, not being defined in clear, quantitative terms, is much used in the watch trade without any definite meaning and, of course, with no guarantee of accuracy of timekeeping in various positions, temperatures, hours since winding, etc.

In buying a new watch, particularly one at a high price, obtain from the jeweler a clearly and legibly written and plainly worded, dated sales slip bearing his full name and address, and specifying the make and number of the movement, number of jewels, number of adjustments, metal and quality of the case in specific terms, and whether, of course, the watch is new or used, if the watch is purchased from a dealer who handles both kinds.

Recently a subscriber to CONSUMERS' RESEARCH BULLETIN purchased a watch of well-known make from a dealer in a small Pennsylvania city. The customer was given a guarantee certificate which he immediately filled out and forwarded to the factory, as directed. The watch was then laid away for three months, after which time it was put into use. The watch never kept good time, and it stopped periodically, almost from the beginning. Then it was supposedly cleaned by the jeweler, but in a few months it stopped and would not run. The purchaser, on complaining to the manufacturer, was advised that there would be a charge of \$7.50 for cleaning and "re-waterproofing" the watch because it had been sold approximately five years ago and the guarantee *ran only for a year from the time of sale to the jeweler*. (This, incidentally, was a watch which had been "certified as to waterproofing quality" by a well-known commercial laboratory, but nothing was said about the waterproofing being of a temporary nature, such that re-waterproofing might be required in

a matter of months after the watch had gotten into the purchaser's hands.) The possibility of this sort of treatment of the customer by a watch manufacturer is something to bear in mind when buying a watch which is supposed to be guaranteed. The only practical remedy for the consumer would seem to be that in buying any watch whose guarantee period does not begin at the time of the retail sale, the watch should be fully guaranteed *by the jeweler in writing*, the guarantee to begin on the date of the sale to the consumer.

A large number of jewels in a watch is a help in selling, for the most part (except for railroad watches, where regulations require 19 or more jewels); even watches under \$20 are now offered with 17 jewels. It is a safe general rule to have a watch cleaned and adjusted every year, or every two years; the larger watches, particularly pocket watches, can run for a much longer time between cleanings. Need for cleaning is usually indicated when a watch starts to run irregularly (and usually slower), unless the cause for irregular timekeeping is some fall, impact, immersion, or other accident. The smallest watches may need to be cleaned at even shorter intervals than once a year. It is better to let a watch go without cleaning as long as possible if there is doubt about the competence of the watch repairman, for much harm is done to good watches by poor workmen.

Prices include federal tax.

Mfr. and Watch Name	Price	Jewels
A. Recommended		
<i>Bulova</i>		
Belmont	\$33.75	15
*Senator	42.50 ³	17
*President-A	49.50 ³	21
President-C ³	49.50 ³	21
<i>Elgin (see also Wadsworth)</i>		
Thorndale	33.75	17
*Stockton (2)	37.50	17
No watch name	49.75 ³	17
<i>Girard-Perregaux</i>		
*Sea Hawk	47.50	15
*No watch name	47.50	17
" " "	50.00	17
" " "	55.00	17
" " "	57.50	17
" " "	65.00	17
" " "2	65.00	17
" " " [SW]	71.50	17
<i>Hamilton</i>		
*Lambert	57.75	17
*Barton "B"	60.50	17
*Grover	64.00	17
Jeffrey	64.00	17
Darrell	65.00 ³	17
Boulton	71.50	19

Mfr. and Watch Name	Price	Jewels
A. Recommended (cont'd)		
Cranston	71.50	19
<i>Longines</i>		
Champlain ²	71.50	17
*President Johnson	100.00	17
President Jefferson II	115.00	17
President Roosevelt	125.00	17
<i>Montgomery Ward</i>		
Buren ¹ (Cat. No. 45-802)	24.95 ³ + postage	17
*Buren (Cat. No. 45-802)	24.95 ³ + postage	17
<i>Omega</i>		
Automatic [SW]	71.50	17
Automatic [SW] ²	71.50	17
Automatic [SW]	95.00	17
<i>Sears, Roebuck†</i>		
Orvin (Cat. No. 4-0350E)	24.95 ³ + postage	17
<i>Rolex†</i>		
*Oyster Perpetual	132.50	17
<i>Wittnauer</i>		
Ensign [SW]	55.00	17
<i>Wyler</i>		
Incaflex ¹	49.75	17
*Incaflex	62.50	17
Incaflex, Dynawind [SW]	65.00	17

B. Intermediate		
<i>Benrus</i>		
Commander	35.75 ³	15
Sharkey	100.00	17
<i>Croton</i>		
Aquamedico	33.50	17
Aquamatic [SW]	49.50	17
<i>Cyma†</i>		
Tavannes	57.50	17
<i>Gruen</i>		
Curvex Marshall ²	49.75 ³	17
Veri-thin Master	49.75 ³	17
Auto-wind Clipper [SW]	71.50 ³	17
Auto-wind Neptune [SW]	71.50 ³	17
<i>Rolex Tudor</i>		
Tudor Oyster ³	59.50	17
Tudor Oyster	59.50	17
<i>Wadsworth (Div. of Elgin National Watch Co.)</i>		
No watch name	29.75	17
" " "	32.50 ³	17
Automatic [SW]	49.75	17
<i>Westfield</i>		
Standish	24.75 ³	7
Cameron	29.75 ³	17
Keith	29.75 ³	17
<i>Wittnauer</i>		
Lawrence ³	62.50 ³	17

* One of the watches tested showing superior timekeeping performance.

† Number of samples tested of watches of a manufacturer or distributor so designated was too small perhaps to afford a basis for more than a limited and tentative judgment.

¹ Watch developed trouble during test and would not run a full day after being fully wound.

² Relatively large position errors.

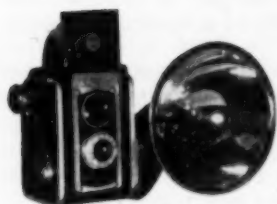
³ Price includes bracelet (other watches were furnished with strap). [SW] Self-winding ("Automatic") watch.



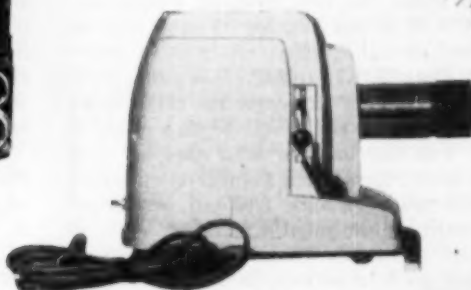
Photographic Equipment for Christmas



Bolleicord III



Kodak Duaflex II



S.V.E. Skyline Model B

THE selection of photographic equipment for gifts for Christmas involves a number of problems. An important factor is usually the cost; another is the photographic skill and experience of the person who will receive the gift, and finally the purpose for which the camera is to be used. If for snapshots in black and white, a camera for $2\frac{1}{4} \times 2\frac{1}{4}$ or $2\frac{1}{4} \times 3\frac{1}{4}$ pictures is to be preferred. If color slides for projection are desired, a 35 mm. camera will be a satisfactory choice for most amateurs. On the other hand, those who wish to take both black-and-white and color pictures may find their needs best met by a camera which, with a special adapter available at extra cost, can take pictures $2\frac{1}{4} \times 3\frac{1}{4}$, $2\frac{1}{4} \times 2\frac{1}{4}$, or $2\frac{1}{4} \times 1\frac{1}{4}$ inches on No. 620 or 120 film or $1\frac{1}{8} \times 1\frac{9}{16}$ inches on Bantam film (one such camera is the *Kodak Tourist 800* which, with the adapter, can take all the four sizes mentioned). For those who do certain special or scientific types of photographic work, a camera with interchangeable lenses, long bellows draw or lens extension tubes, and ground-glass focusing is necessary. In buying for the advanced amateur, it would be well to find out in some detail what type of equipment he or she is most interested in before making any purchase, for a gift of equipment which is not well suited to the recipient's needs, or which he may consider inferior or poorly designed, will rarely be appreciated. Some photographic amateurs have rather detailed technical knowledge and pretty definite ideas of what they need, and just another camera, however fine and costly it may be, may leave them not too well satisfied with the gift.

If the amount to be spent is \$25 or less, a *Zeiss Ikon Box Tengor* (\$17), or *Kodak Duaflex II* with *Kodak* lens (\$22.50; flash gun, \$4.25) are very good, and these will serve well the needs of children and the person who takes snapshots occasionally. For the amateur who already has

Voigtlander Rangefinder Bessa II



Kodak Signet



Voigtlander Vito II

a camera, a gadget bag (as low as \$4 from Montgomery Ward), a flash unit (*Kalart*, \$7.50 and up), a photo album, or a good, sturdy tripod are examples of low-priced accessories that are often appreciated.

In the \$50 class, the choice of a camera will de-

pend upon its intended use—for color slides or for black and white pictures. The *Kodak Tourist II* (\$46.25 with *Anaston f/6.3* lens) or the *Voigtlander Perkeo I* (\$39.50) are fairly good for black and white pictures. Both are compact, folding roll-film cameras. If the camera is to be used to make color slides, the very compact *Voigtlander Vito II* (\$54.50 to \$61.25), for 35 mm. film, is suitable, and of high quality. At a lower price, the *Kodak Pony* (\$31.15 to \$35.75) is also a good buy. A good quality projector for color slides in the \$50 bracket is the *S.V.E. Skyline Model B* (\$52.45). For the amateur who does his own darkroom work, there are a number of enlargers in the \$50 range (*Kodak Hobbyist*, *Fotolarger* of the Testrite Instrument Co., New York 3) which meet the needs of many hobbyists, although they are inferior to such makes as *Omega* and *DeJur* at \$100 and up.

The \$100 bracket offers some really fine equipment (and some mediocre and poor products, too). For 35 mm. color slides, the *Kodak Signet* (\$92.50), with lens quality and shutter accuracy as good as any 35 mm. camera tested by CR, is the top choice. A 2 x 2 inch slide projector of top quality is the *Spencer Delineascope MC300* (\$99.50). For black and white pictures, a *Kodak Tourist 800* (\$97.40) for No. 620 film is fairly good, good also for color transparencies (using an adapter to cut down size of picture to 1 5/8 x 2 1/4 inch or *Bantam* size), but at \$125 a *Voigtlander Bessa II* with coupled range-finder is better. Both are folding roll-film cameras. In the same price range are the top quality enlargers, *Omega B-6*, *DeJur-Amsco Versatile I* and *II*, and the *Kodak Flurolite*. Those interested in "press"

photographs will undoubtedly have a *Crown* or *Speed Graphic* in mind (\$180 and up, with lens).

The lowest-priced twin-lens reflex camera of fine type and quality is the *Rolleicord III* with *Xenar* lens at \$149.50. This camera is suitable for black and white or color (picture size 2 1/4 inches square), but color film in this size is returned by the processor unmounted. 35 mm. or *Bantam* color film is returned in cardboard mounts; 35 mm. can be used in *Rolleicord* and *Rolleiflex* cameras with an adapter available at \$36 extra.

Three-dimension color photography, which has become very popular in the last few years, requires a fairly expensive stereo camera to satisfy the critical amateur. The *Stereo-Realist* (\$159) is preferred to the other American-made roll-film cameras of this type tested by CR.

For those who can afford to buy a camera without thinking seriously about the cost, many finely finished cameras are available in the \$200-\$500 range. These cameras, for the most part, do not offer higher lens quality than the *Signet* or the *Rolleicord III* (*Xenar* lens); the higher price provides more gadgets and conveniences, faster lenses, and interchangeability of a wide range of lenses and other fitments, some of which alone cost as much as a complete camera of a less high-flown make. (Examples of some of the high-priced gadgetry offered for the de luxe 35 mm. cameras are: special view-finders at \$40, mirror reflex housing at \$150, and special lenses at \$50 to \$600 or even more.) Examples of some very fine (but high priced) cameras are the *Exakta VX* (35 mm.), the *Rolleiflex Automatic* (roll film, 2 1/4 x 2 1/4 inches), and the *Linhof Super Technika* (plate and film pack, 2 1/4 x 3 1/4 to 5 x 7 inches).

Corrections and Emendations to Consumers' Research Monthly Bulletins

Cameras, 35 mm.
Pages 18 and 20
July '52 Bulletin

Kodak Signet. Change rating from *B. Intermediate* to *A. Recommended*. Tests indicate an improvement in lens quality; lenses on the later samples were very good indeed.

Kodak Retina IIa. Change rating from *C. Not Recommended* to *B. Intermediate*. Lens quality, while not as good as the *Signet's Ektar* at full

aperture, is sufficiently good to warrant the higher rating of *B. Intermediate*.

Ice-Cream
Freezers
Page 26
July '53 Bulletin
and
Page 8
ACB '53-'54

The manufacturer advises us that the *Mi Rapid*, special type, non-electric ice-cream freezer has been discontinued and is not now in production for distribution.

Low-Priced Postal Scales for Home Use in the \$1 to \$5 bracket

POSTAL SCALES are not often bought for use in the home, but for anyone who writes many letters they have their value in saving a trip to the post office or saving postage when there might be doubt about the weight of a letter or small parcel. Scales of the type and accuracy required in post offices are expensive, and it would usually be better to spend a little extra on postage occasionally, than to buy a first-rate postal scale at a high price, for infrequent use. Most of the cheap scales studied by CR are considerably overpriced, considering what they involve in the way of mechanism. If such a scale, for instance, as the *Hanson Jr.* were offered at about \$1, which seems possible, it is safe to assume that many more consumers would be interested in buying a small scale for home use.

None of the eight scales listed below had the accuracy required of post office scales, but the best of them would be useful for approximating the amount of postage for a letter or small package, or for making weighings for other household purposes. All the scales tested gave some information regarding postal rates, either printed on the face of the scale or on an accompanying card. Because there are fairly frequent changes in postal rates, anyone pur-

chasing a scale with postal rate information on the dial should make sure that the markings are correct at the time of purchase. Three scales, the *Hanson Models 1546 and 158* and the *Mile* had the desirable feature of indicating on the face of the scale a date at which the rates shown were valid. (Since parcel post rates were changed on October 1, 1953, the postage charges marked on some of these scales would now be incorrect.)

Figures in parentheses after the scale capacities give the maximum errors found at the given scale reading with the load centered on the pan (when the scale had a pan). The accuracy of most scales falls off considerably when the load is displaced from the center. All the scales except the two pocket scales had a zero adjustment. Pans of six scales were stabilized—by a parallel motion mechanism—above the working parts. All scales listed were spring scales except the *Hamilton*, and the fifth scale listed, which had no brand name.

B. Intermediate

Hamilton Postal Scales, Model No. 50 (Hamilton Specialties, Inc., 5 Watson, Boston 18) \$3.95. Capacity, 8 oz. by $\frac{1}{4}$ oz. (less than +0.1). Size, $4\frac{3}{4}$ in. x $2\frac{1}{4}$ in. x $5\frac{1}{2}$ in. Pendulum type (mechanism not



The five larger postal scales tested were (from left to right): *Mile*, *Hamilton Model 50*, *Liberty No. 1*, *Hanson Model 1546*, *Hanson Jr. Model 158*, and *Economy No. 500*. The *Postmatic* is at the left in the foreground, and the small pendulum scale with no brand name at the right. The picture at the right shows the small pendulum scale in use in weighing a letter.

enclosed). Best designed, most sensitive (for its capacity); was the most accurate, and had freest motion (least friction) of the scales with a pan.

Hanson, Model 1546 (Hanson Scale Co., 525 N. Ada St., Chicago 22) \$4.95. Capacity, 2 lb. by 1 oz. (less than +0.1). Body of scale made of plastic (5¾ in. x 2¼ in. x 6¼ in.). Graduated in ounces and cents postage for air mail, first class, circulars and merchandise, books and catalogs, and parcel post. Insufficient clearance around the rod supporting the platform (which in the interest of accuracy should be changed in design so that it can be inserted into the mechanism only in the correct position).

Hanson Jr., Model 158 (Hanson Scale Co.) \$3.25. Capacity, 8 oz. by ½ oz. (+0.1 oz. at 6 oz.). Plastic body (4¾ in. x 1½ in. x 4¼ in.). Graduated in ounces and shows on the pan postage rates for first class, air mail, and circulars and merchandise.

Mite (B-T Co., Inc., Milwaukee) \$2.75. Capacity, 16 oz. by 1 oz. (+0.2 oz. at 8 oz.). Metal body (4¾ in. x 3½ in. x 4¼ in.). Graduated in ounces and cents postage for letters, air mail, news and magazines, merchandise and printing, books and catalogs, and parcel post.

No Brand Name (Purchased at stationery store) \$2.95. Capacity, 2 oz. by 1/20 oz. (-0.1 oz. at 2 oz.).

Pendulum type; letter is hung from a small clamp. No zero adjustment, and the zero of the scale was not correct. Small, gilt metal pocket device in 3 x 3 in. leather case, containing two 1 x 1½ in. plastic envelopes for carrying stamps.

C. Not Recommended

Economy Postal Scale, No. 500 (I.D.L. Mfg. & Sales Corp., 132 Lafayette, New York City) \$1.98. Capacity, 1 lb. by ½ oz. (-0.5 oz. at 1 lb.). Metal body (3¾ in. x 2½ in. x 4 in.). Graduated in ounces and cents postage for letters, air mail, merchandise and printing, and parcel post.

Liberty, No. 1 (Triner Scale & Mfg. Co., Fairfield at 21, Chicago) \$3.40. Capacity, 1 lb. by ½ oz. (+0.3 oz. at 4.5 oz.). Metal body (3¼ in. x 5 in. x 4½ in.). Graduated in ounces and cents postage for first class, air mail, foreign first class, merchandise and circulars, and catalogs and books.

Postamatic (Colloid Equipment Co., Inc., 50 Church, New York 7) \$1. Capacity, 4 oz. by 1 oz. (readings and errors variable). Pocket device consisting of spring, enclosed in transparent plastic case about ½ in. diameter x 4 in. length. Graduated in postal rates only, for first class and air mail.

Batteries and Guarantees

AT page 29 of CR's June 1953 BULLETIN, there was an article entitled "Get It in Writing, with Full Details—or Look Elsewhere," which dealt briefly with certain matters connected with storage battery guarantees and with batteries for which especially long life or recuperative ability is claimed. One of our readers makes the following interesting comment in connection with one of the points made in that article:

I agree fully with your sentiments. Back in 1937 I bought a battery which was guaranteed for the life of the car. It cost me about \$22, while a mail-order firm's battery of similar size and capacity cost about \$8.50. After a year, my car was wrecked and ended its life. Feeling that I had a "super duper" battery, however, I carefully transferred it to my next car. In less than a year it failed completely.

When I tried to obtain an adjustment on it, the manufacturer pointed out that I had voided the guarantee by transferring the battery to another car, and that was that. There was no reply to my statement that I thought a \$22 battery "guaranteed for the life of the car" should last longer than an \$8.50 battery which was guaranteed for two years. I am absolutely convinced that the manufacturer knew that his battery was no better than any other battery, but that he figured that the average life

of a car in one owner's hands was not more than 2½ times the life of the average battery, and by charging 2½ times the normal price, he could afford to replace the batteries when they failed and still make money on the deal!

Bear in mind that the battery manufacturer who gives an abnormally long guarantee is very probably working on a basis by which he is able to charge a lot more in dollars for only a little more in battery life; he can well afford to pay out on his guarantee in the few cases where customers meet all its terms and claim an adjustment, since he has a large margin available to cover the relatively few collectible losses. A fairly large percentage of those who buy the extra-long-life battery will have slipped up in some way so that they are unable to collect on the guarantee; in other cases, the battery will perhaps survive to the end of the guarantee period. Sellers of "long-life" automobile batteries will likely charge enough extra to provide a considerable profit above those manufacturers whose advertising claims for battery life are much more conservative and more closely reflect actual battery service in average use.

Play safe, and read the guarantee closely, in all its terms, before you decide on a purchase.

Blackstone Automatic Washing Machine

THE *Blackstone Model 250* washing machine is fully automatic, unlike the previous *Model 150* which required the operator to shut off the wash water when it reached the proper level. *Model 250* comprises a number of other improvements. The new machine uses a friction clutch in the drive so as to increase the speed of the tub gradually when the spin cycle starts; this greatly reduces the current drawn by the motor during the speed-up period.

The *Blackstone* differs from most automatic machines recently tested, in the manner in which the automatic control is obtained. The cycle of the *Blackstone* is mechanically controlled by a cam driven from the main gear case. This has some advantages over the electrical controls more commonly used in automatic washing machines as it eliminates a considerable amount of detail in wiring, solenoids, switches, and a timer (clock) motor. The mechanical cam device has a disadvantage, however, in that, in the rather unlikely circumstance that a power failure should occur during the time that the machine is filling with water, the flow of water will not be shut off. (No doubt it is for this reason the manufacturer prefers that the machine should empty into a floor drain; this prevents overflow onto the floor in case of a power failure during a filling period.) The tub is made of stainless steel.

The effectiveness of the *Model 250* in washing clothes was found to be very good, and effectiveness in drying was good. Manufacturer recommends using only a true soap (not a synthetic detergent), exclusively, "to protect your machine."

A. Recommended

Blackstone, Model 250 (Blackstone Corp., Jamestown, N.Y.) \$330.

Dimensions and Description: 36 in. high, 25 in. wide, 26 in. deep. Maker's capacity rating, 8 lb. Agitator type with loading door on top. Machine does not require bolting to floor. Temperature of wash and rinse water adjustable by setting control at "Hot,"

"Cold," or "Medium." If a different temperature of water is desired for rinsing than was used for



Blackstone Model 250

washing, the control must be set to the lower temperature after the machine has started to wash. The water level is time-controlled and no setting is provided for smaller-than-normal loads. Action can be stopped or started at any part of the cycle. A complete cycle consists of a washing period which can be varied from 2 to 15 min., a spin, an agitated and an overflow rinse, and a final damp-dry spin, for a total time of 37½ min., when the 15-min. washing period is used.

Performance in Test: Effectiveness in washing, very good. Effectiveness in extracting water from clothes, good (water left in 8-lb. load of clothes was 65% of dry weight of clothes). Water consumption for complete cycle with control set at "Hot" for washing and reset at "Medium" for rinsing, 19½ gal. of hot water, 13.5 gal. of cold water. Current draw at start of spin, 8 amperes (good). Energy consumption for complete cycle, 215 watt-hours.

Off the Editor's Chest

(Continued from page 2)

journal, cost two well-known fountain pen companies more than half a million dollars every year before the all-time, unconditional guarantee was discontinued.

On the other hand, the offer "your money back if not satisfied" has been frequently used effectively with a number of products because so few consumers take advantage of it. In the case of battery "rejuvenators," for example, a Better Business Bureau executive has reported that in the 25 years of the appearance and disappearance of scores of these products on the market his particular organization had no record of receiving any complaints from consumers. In testifying before the Senate Small Business Committee in June 1953, the executive of one much-publicized battery additive commented that he went all out in dealing with a dissatisfied customer because the money back guarantee was "more of a stunt than anything else."

In the case of a new "water conditioner" much is made of the fact that it offers a money back guarantee (the prices start at \$25 for a home installation size). It happens, however, that this particular gadget requires installation by a plumber and even if a dissatisfied customer is given back his purchase price he may still be out-of-pocket a substantial sum for the plumber's time in installing and then removing the item. Nowadays plumbers' work often comes to a startling amount, even for a small and simple job.

As the National Better Business Bureau has pointed out, a guarantee is no better than the firm or individual behind it, and a sound, reputable firm is conscientious in carrying out its guarantees and promises. Sometimes, however, a corporation may be overcautious in limiting its responsibilities. One consumer noted with amusement the claim which accompanied a special kind of adhesive tape that read in part "Exclusive Warranty. Seller warrants its tape to be free from defect in materials and workman-

ship, but limits its obligation under this warranty to replacement, or at its option reimbursement of the purchase price, of tape shown to Seller's satisfaction to have been defective at the time Seller sold it. Seller neither makes nor shall be bound by any other warranty, express, implied, statutory or otherwise. Under no circumstances will Seller be liable for any loss, damage, expense, or consequential damage of any kind arising in connection with the use of, or inability to use, its tape." The consumer who sent to CR this guarantee, which contained six paragraphs in all, commented: "As I understand the enclosed printed matter, the manufacturer has no confidence whatever in his product." As we see it, his legal department has made it practically out of the question for the buyer to obtain redress in any case where the seller might choose to evade responsibility for poor quality or performance of the tape. Such a warranty, in our opinion, represents poor public relations policies, and from that standpoint had been better left unwritten.

Consumers are well advised to take careful note of the terms of any guarantee before making a purchase where a final decision to buy or not to buy is determined by the meaning of such a guarantee. Consider carefully whether the terms are practically useful or whether the refund of the purchase price would be only a small part of the actual costs involved. Above all, date the guarantee with the month, day, and year on which it was received and put into effect and file it carefully where it can be found for future reference. Whether a small sum or a large sum is involved, if the purchase is unsatisfactory, make an effort to collect under terms outlined in the guarantee. If consumers generally insist that guarantees be carried out, there is less likelihood that a warranty will be employed as bait, carried out only under strong protest and after much argument, or otherwise misused.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF *Consumers' Research Bulletin* published monthly at Washington, N. J., for September 1952-September 1953. 1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Consumers' Research, Inc., Washington, N. J.; Editor, F. J. Schlink, Washington, N. J.; Managing editor, none; Business manager, Charles D. Cornish, Washington, N. J. 2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Consumers' Research, Inc., a non-profit corporation, not a business enterprise, not operated for profit; Washington, New Jersey. Stock, none. 3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None. 4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. C. D. Cornish. Sworn to and subscribed before me this twenty-fourth day of September, 1953, Elizabeth B. Smith [Notary Public]. (My commission expires July 31, 1958.)

Quackery

in Control of Corrosion and in Other Fields

THE CONSUMER is offered various devices for controlling corrosion and, in discussing these, Dr. H. H. Uhlig, Professor of Metallurgy at Massachusetts Institute of Technology, sets down some very sound general principles in an article prepared for the journal *Corrosion*, October 1952, page 361 (Vol. 8) and reprinted in the May-June 1953 issue of *Engineer's Digest* of the U. S. Coast Guard. "Controlling corrosion," he says, "by sleight of hand and by magic has much to recommend it. The first cost is not unreasonable, and the upkeep is simple." The quack corrosion control devices, however, have a weakness in that "after an initial period of brilliant success, the boiler, or condenser, or piping disgustingly succumbs to a malady strongly resembling corrosion."

In his interesting article, Professor Uhlig discusses a number of quackeries whose promoters had persuaded even a few scientists that there was merit in an idea which much later turned out to be a hoax and he mentions the number of "hocus-pocus devices" from "proprietary medicines...to carburetors that 'double' gasoline mileage." He refers to various gadgets in the field of corrosion which operate by no known scientific principles (although their promoters in their advertising and sales talks bring in such learned chemical and physical terms as catalysis and magnetic susceptibility to describe the mode of operation). He likens such gadgets to the "Brooklyn Bridges" which are sold every day by strangers to engineers and purchasing agents of substantial business firms. Dr. Uhlig makes a good point in noting that success in the selling of such gadgets to purchasing agents of reputable companies provides evidence of scientific illiteracy on an amazing scale and illustrates the weaknesses of the type of technical education we have given to the people who buy such equipment.

"Progress [of the science of corrosion] has unfortunately been retarded by the superstitions, by fakers and by deluded individuals, all of whom have had rich pickings...over the past fifty years." The lack of rapid techniques for evaluation "makes it easier to sell phony ideas and devices which exploit the superstition, ignorance, and lack of confidence" among those who purchase certain types of equipment.

While the reference is primarily to corrosion

prevention devices, a much broader application could be made, for the general public is ready, as is indicated by correspondence from many of our readers to CR, to believe impossible things about almost any device or chemical specialty pushed by a salesman who is energetic, aggressive, imaginative, and who talks in language that sounds scientific. In a very large proportion of cases, the quack product does not even warrant the carrying on of a test; its evident lack of sound scientific principles in its design or the claims made would make it a waste of time to engage the energies of persons with advanced training in science and engineering to make tests on the device, appliance, or chemical mixture. Scarce training and skills ought to be employed on projects of real importance.

The consumer should so orient himself that he is automatically suspicious of everything for which no reasonable basis of operation is offered by the seller. As Dr. Uhlig says, "pink pills, electric belts, and perpetual motion are all sold on the basis of verified letters from satisfied customers." If there are, in the claims, things which you have reason to believe impossible or absurd, it would be wise to assume that the rest of the literature is not to be trusted. Whenever any statement appears which, on its face, is false or misleading, one reasonably assumes that the promoter either does not know the field in which he is operating or that he is willing to "stretch" the facts in describing his invention. If the promoter cannot tell you how his gadget works or can only describe it in terms which are incomprehensible or sound like gibberish to an intelligent layman or to his friend or acquaintance who has some knowledge of physics, chemistry, or engineering, it will be wise to disregard his claims entirely.

Teachers in high schools and colleges will find it well worth while to take up with their students articles in CR BULLETIN which discuss quack and fake products which cannot possibly perform as claimed, and use these as a means of educating young people to a proper attitude of skepticism regarding things for which pseudo-scientific and pseudo-technical claims are made with which they are completely unfamiliar, and which, on their face, should not carry conviction to any educated or informed person.

It should be remembered that in these days

of atomic energy, television, and photoelectric door openers, no person can consider himself even reasonably well educated if he is totally ignorant of simple scientific principles and cannot see the logical fallacies in a device that is supposed to make his car run twice as far on a gallon of gasoline or prevent the corrosion or scaling-up of plumbing pipes by a process whose operation cannot be explained or proven in terms convincing to physicists, chemists, and engineers. Sometimes an "explanation" of sorts will be provided, but as with fake water-softening devices and scores of products for reviving dead batteries, increasing gasoline mileage, or reducing oil consumption of a car, this explanation, though sometimes plausible to the inexpert or to the non-specialist, will bristle with pseudo-scientific absurdities or contradictions to a person trained in the particular art or science in question.

The most insidious deception in sales promotion is the allegation that something is good because big manufacturers use it; big manufacturers and, for that matter, state and federal government departments are likely to buy anything—whether they use it more than once, or whether it adequately serves their purposes is quite another matter entirely. Remember that they may often be buying it in order to test the product and their tests may indeed have shown that it is useless or grossly misrepresented. Many automobile manufacturers, certainly, have bought a host of gadgets and accessories intended for use on their cars to improve performance in some way for no other purpose than to try them out in their laboratories; yet the seller would give the impression that purchase by a manufacturer is proof that the car manufacturer recognizes the merit of the product. The Bureau of Standards, for example, has bought many hundreds of dollars worth of quack products in order to test their worth for government agencies investigating possible fraud, or for some other government department as a prospective user, or for the general public. *The only credible proof* that the product has merit in the eyes of the manufacturer or a government agency is a written statement from the firm or bureau concerned that a test has been carried out, under technically controlled conditions, and the product has been found to be good and efficient. Mere purchase of the item has no meaning whatsoever from the standpoint of the wise consumer; very often the purchase itself may reflect merely the results of skilled aggressive salesmanship on the part of a modern "medicine man" putting over an up-to-the-minute quackery of some sort.

One of our correspondents, who has a fairly low opinion of the average man's knowledge of scientific and technical problems of even the most elementary nature, deplores "the inability of the ordinary person to apply a general rule or law to a specific example. . . . Always, it seems," he comments, "they must have specific information about *this* item, which they feel must be different." His particular complaint was about an instance where a man had concluded that a particular oil additive was good because after he used it he had no more engine trouble.

The user of the additive was unaware of a fallacy which the logicians talk about, called, *Post hoc, ergo propter hoc*, which is to say that because something happened *after* something else is no good reason to suppose that it happened *because* of something else. This fallacy is perhaps the one which is most common in causing the waste of consumers' money on useless or misrepresented products. The average man could save himself hundreds of dollars in his lifetime if he would just remember the simple principle in logic that A happening before B *does not make A the cause of B*. Thus, the use of a new gasoline, followed by an increase of miles per gallon does not reflect an inherent property of the new gasoline, at all; contrary to the advertising, substantially all gasolines give the same number of miles per gallon when other conditions are unchanged, and the ignition adjustment is correct for the *type* of gasoline then in use. A reduction in oil consumption after a change to a new brand would not necessarily mean the new oil was better; it might very likely mean that the new oil is *different*, and has a higher value of viscosity at the operating temperature of the engine than the old.

COMING

in the December issue

CR's report on Radio & Television Sets

8 Clock Radios

8 Table Model Radios

4 Portable Radios

Television Sets:

GE, Packard Bell, RCA Victor,
Westinghouse, Sylvania, Zenith, Magnavox
Helpful for Christmas Gift Selections!

Fire Extinguishers

THE most important (and least remembered) fact regarding fire extinguishers is that tests and judgment of them are *highly expert matters* calling for the work of people with long experience and *engineering* knowledge of fire prevention and the problem of controlling incipient fires. Neither the extinguisher salesman nor his prospective customer is in a position to match his judgment as to what is a good fire extinguisher against that of the highly qualified agencies, the Underwriters' Laboratories, Inc., of Chicago—called *UL*—or the Engineering Division of the Associated Factory Mutual Fire Insurance Companies, Boston. (Extinguishers approved for use on motor craft are listed in a publication of the U. S. Coast Guard. Extinguishers not so approved are not recommended for consumer use.)

An extinguisher, to be suitable, and safe, must not only meet *specifications and test requirements* satisfactory to the *UL*, but it must be of a *type suited to the fire upon which it is expected it may be used*. Unless an extinguisher is approved by one of the authorities mentioned, and unless it is correctly selected for the type of risk, the consumer should regard any fire extinguisher as worthy of only a *C-Not-Recommended* rating, for home use. Having chosen an *approved fire extinguisher of suitable type*, the consumer may purchase safely on a price basis. Offices and laboratories particularly should take pains that an extinguisher of the right type is at a given location. (It is very common that an extinguisher of a type which will be wholly unsuitable for the kind of fire likely to occur at a given location will be present at that point; e.g., a soda-acid extinguisher at a place where a spilled-gasoline or solvent fire is likely to occur.) Many fires are not extinguished because the wrong kind of extinguisher is used, or is used improperly. Most unwise in almost all cases is the purchase of extra-small fire extinguishers that are now very popular, or any extinguisher of any type which the Underwriters' Laboratories do not approve—extinguishers, for instance, of less than 1-quart capacity using carbon tetrachloride.

Manufacturers very commonly recommend their fire extinguishers for types of fires for which they are not adapted. Thus, in spite of claims, carbon tetrachloride fire extinguishers are not effective on deep-seated fires of wood, paper, rubbish, etc. (so-called "Class A" fires), which require the quenching and cooling effect of water; and the tetrachloride (vaporizing liq-

uid) extinguishers should not be used on fires of liquids of the type of acetone, ether, or alcohol.

It will never be safe for any consumer to buy an extinguisher on the basis of any sort of *demonstration*. Even fire chiefs have occasionally fallen for misleading and tricky demonstrations of fire extinguishers. It is an old technique of the extinguisher trade to utilize demonstrations that make an inferior fire extinguisher perform well on a test fire which has some peculiar or exceptional characteristics.

Types of Fire Extinguishers

Water pails or water pump tanks, if kept filled at all times, are among the best extinguishers for small fires in paper, wood, textiles, or rubbish. Use of such equipment is, of course, practicable only where freezing temperatures are not encountered. While less convenient in operation than extinguishers with self-generated pressure, pump tanks have the advantage that they may be used intermittently and refilled during a fire.

Soda-acid extinguishers are suitable for use on fires in ordinary combustible material wherever the quenching effect of the water solution may be employed. They must *not* be used on live electric equipment, and are ineffective on fires in open containers of flammable liquids, greases, etc. Recharging is inexpensive, but it is necessary that it be carried out at least once a year. Soda-acid extinguishers must not be used where they might be subject to freezing. The solution damages fabrics.

Anti-freeze-solution (non-freezing water solution) extinguishers are suitable for the same kind of fires as are the soda-acid type, but are used where there is danger of freezing. These extinguishers are considerably more expensive than the soda-acid type, and manufacturers' own recharges must be used. The solution is slightly more harmful to fabrics than is plain water.

Foam-type extinguishers are particularly effective for use on fires in most flammable liquids in open containers, primarily because of the smothering effect of foam. On fires in ordinary combustible materials, the foam extinguisher is about as effective as a soda-acid extinguisher. Foam must *not* be used on live electric equipment. The effectiveness of foam as a universal extinguisher has been greatly overemphasized by salesmen. The manufacturers' own recharges must be used. Foam damages fabrics somewhat, and spoils foods, of course.

Carbon dioxide extinguishers are particularly suitable for use on fires in grease and in live electric equipment. Because the gas lacks wetting and cooling action, they are not effective on ordinary combustible material. Neither are they suitable for use on fires where there is probability of reignition, such as in furniture or automobile upholstery, soot, charcoal, gasoline, or fires in ovens. Many purchasers and users have tended to put far too great reliance upon carbon dioxide (CO₂) extinguishers. Small CO₂ extinguishers are strictly first-aid appliances; that is, they can take care of only small fires (a 2½-pound extinguisher has a discharge time of only about 18 seconds; a 15-pound unit, 45 seconds), and for this type of fire extinguisher to be effective, one must be able to approach very close to the fire. The wide distribution and indiscriminate use of CO₂ first-aid fire extinguishers constitute a serious fire hazard in many homes, offices, and laboratories. In many cases, CO₂ extinguishers are provided because of ignorance of their limitations, and there has been a marked tendency on the part of users to overrate carbon dioxide extinguishers because of their relative harmlessness to materials with which the gas comes into contact. In one large installation, CO₂ extinguishers outnumbered all other types, although the fires calling for CO₂ extinguishers were a small minority. Carbon dioxide extinguishers are at a disadvantage in open air.

The carbon dioxide snow from the discharge must not be permitted to remain in contact with the skin even for a moment. Because the gas does not deteriorate with age, an annual recharge is not required, but the extinguisher should be weighed at least once a year to detect loss of gas.

Portable dry-chemical extinguishers which eject dry material by gas pressure are applicable to the same uses as are carbon dioxide extinguishers. They should be weighed at least once a year to detect loss of gas.

Vaporizing-liquid extinguishers contain modified carbon tetrachloride, treated to be safe from freezing down to -50°F, and to be non-corrosive to the mechanism of the extinguisher. The term "fire extinguisher" has become synonymous in many peoples' minds with carbon tetrachloride extinguishers, but many do not realize that these are not only ineffective on many types of fires, but that their use involves risk of serious illness and sometimes death, as the very deadly war gas, phosgene, is produced by the action of the flame upon the carbon tetrachloride. Use of any carbon tetrachloride extinguisher can result in a dangerous concentration of fumes in any confined space, and every such extinguisher should

bear a warning label regarding the great dangers involved in its use. This type of extinguisher should be kept *completely filled*.

Only the liquid supplied by the manufacturer should be used for recharge. The liquid used in the vaporizing-liquid type of extinguishers is practically harmless to most materials (except foods), but its vapor is coming to be more and more recognized as highly dangerous to breathe. Any use of an extinguisher of carbon tetrachloride or similar material in a small unventilated space represents great danger to the user by reason of the poisonous nature of the vapors of the extinguisher liquid. One can use such an extinguisher with reasonable safety only in the open or in a large room. The most effective makes of volatilizing-liquid extinguishers project the liquid on the fire in a relatively fine, thin stream, so that the liquid is almost completely vaporized. The vapor "blankets" the burning material and cuts off the air. These extinguishers are effective on fires in small quantities of gasoline, oil, or greases on floors, or in *partially filled* open containers. If the stream from the extinguisher is directed into a nearly full, or full, open container, the burning liquid may be thrown out of the container and the fire thus be spread to adjacent surfaces. The stream may be directed quite accurately at the fire. Because of the low extinguishing capacity, and difficulty in keeping such extinguishers in good working order over a period of years, no extinguisher of this type is rated higher than *B. Intermediate*.

Once a year or oftener, an extinguisher of the vaporizing-liquid type should be tried out to see that liquid has not been lost, and that the appliance is in good working order and projects a good stream.

The UL listing is particularly important on tetrachloride and similar extinguishers.

Carbon tetrachloride "grenades" are bottles, bulbs, or globes filled with carbon tetrachloride and hermetically sealed. They are intended to be thrown at the fire or dropped upon it (sometimes by an automatic release device of some sort), spilling their contents all at once. Claims that an installation of large numbers of so-called "automatic" grenades at regular spacing intervals is equal in effectiveness to an automatic sprinkler installation are false and dangerously misleading. The National Bureau of Standards found that "The bulb-type devices when employed as automatic extinguishers were not effective in protecting the enclosed space"; the type was found ineffective on fires both in ordinary combustible materials and on flammable liquids. Deaths have resulted from the deadly phosgene gas released by the liquid of this type

of extinguisher in the presence of heat. All grenade-type fire extinguishers are *C. Not Recommended*.

"Beer cans." So-called "beer-can" extinguishers which use carbon tetrachloride have been very popular because of strong and misleading claims in advertising, and their low price (about \$1.25 in the available pint size instead of about \$8 for the usual quart-size carbon tetrachloride extinguisher). The "beer-can" extinguishers are fundamentally unsafe and uncertain; they are not approved by qualified authorities.

Small extinguishers with methyl bromide. Department store and mail-order dealers have created a vogue recently for *very small fire extinguishers*, of which a number have used the deadly methyl bromide liquid, which expands to become a gas when pressure is relieved by opening a valve. Such ineffective and potentially dangerous extinguishers have even been promoted by a large chemical supply house, and the "technical report" of a nationally-known commercial testing laboratory, both of which failed entirely to mention the extreme toxicity of the material that was used in such small extinguishers, and the fact that such extinguishers have not been approved by the *UL* and other expert agencies.

Methyl bromide is a most deadly poison, and has caused many deaths. Breathing it involves risk of death, and skin contact may produce a lesion difficult to heal.

Small extinguishers with CB. A substance called chlorobromomethane (abbreviated to CB or CBM) is now being substituted for methyl bromide in many extinguishers. Although safer than methyl bromide, it is not harmless by any means. CB and its decomposition products may endanger life when an extinguisher containing it is used in a small, or enclosed, space. Its use on any fire, therefore, should be with the utmost care to avoid any breathing of the fumes beyond what is absolutely unavoidable.

All extinguishers containing methyl bromide are *C. Not Recommended*. All extra small, compact extinguishers are *C. Not Recommended* unless the composition of the liquid is known and is known to be relatively non-toxic, and unless the device is listed by the *UL*.

Dry powder tube extinguishers (sheet metal or paperboard tubes filled with some inert material), once popular, and often sold by canvassers, are revived from time to time. Extinguishers of this type, like liquid grenades, will tend to increase rather than diminish the hazard in the home because their presence engenders a false sense of security.

Sources of Supply

The following are manufacturers of approved types of fire-extinguishing equipment, with indication of the types made by each. The vaporizing-liquid extinguishers (vl) are rated *B. Intermediate* in every case, as is shown by the *B* following the vl symbol; all other types are rated *A. Recommended*. The following are the symbols used for brevity in indicating types offered, after each maker's name: (af)=anti-freeze; (CO₂)=carbon dioxide; (dc)=dry chemical; (f)=foam type; (pt)=pump tank; (sa)=soda acid; (vl)=vaporizing liquid. When the (†) symbol follows the code letters, it indicates that the manufacturer makes more than one model of that type of extinguisher.

Acme Equipment Co., Inc. (CO₂) • All-Out Extinguisher Co. (dc†) • W. D. Allen Mfg. Co. (f) (sa) • American-La France Foamite Corp. (af†) (CO₂†) (dc†) (ff) (pt†) (sa†) (vl†B) • Ansul Chemical Co. (dc†) • Badger Fire Extinguisher Co. (af†) (ff) (pt†) (sa†) (vlB) • Buffalo Fire Appliance Corp. (af) (CO₂†) (dc†) (pt†) (sa) (vl†B) • Canadian Fire Hose Co., Ltd. (f) (sa) • Champion Sprayer Co. (pt) • Columbia Fire Extinguisher Co. (f) (sa) • C-O-Two Fire Equipment Co. (CO₂†) (dc†) • C-O-Two Fire Equipment of Canada, Ltd. (CO₂) • Coulter Copper & Brass Co., Ltd. (f) (sa) • Dayton Fire Extinguisher Co. (vlB) • Geo. W. Diener Mfg. Co. (af) (f) (pt†) (sa†) • Dunham Mfg. Co. (CO₂) • Elkhart Brass Mfg. Co. (f) (sa) • F-R-X Mfg. Co. (vl†B) • Fire Master Corp. (CO₂†) • The Fyr-Fyter Co. (af†) (CO₂†) (dc†) (ff) (pt†) (sa†) (vl†B) • Fyr-Fyter Co. of Canada, Ltd. (af) (vlB) • Garth Co. (f) (sa) • General Air Products Corp. (CO₂†) • General Detroit Corp. (af) (CO₂†) (dc†) (ff) (pt†) (sa†) (vl†B) • General Pacific Corp. (af) (CO₂†) (dc†) (f) (sa) (vl†B) • Globe Automatic Sprinkler Co., Inc. (f) (sa) • Harker Mfg. Co. (f) (pt) (sa) • International Chemical Extinguisher Corp. (dc) • Kent Extinguisher Co. (vl†B) • Kidde, Walter & Co., Inc. (af) (CO₂†) (dc†) (ff) (sa) (vl†B) • Kidde, Walter & Co. of Canada, Ltd. (af) (CO₂†) • Knight & Thomas, Inc. (af†) (f) (sa†) • La France Fire Engine & Foamite, Ltd. (af) (CO₂) (ff) (sa†) (vlB) • Lofstrand Co. (pt†) • Miller-Peerless Mfg. Co. (f) (pt†) • National Foam System, Inc. (f) • Parco Products Co. (pt) • Phister Mfg. Co. (f) (sa) (vl†B) • Power-Pak Products, Inc. (CO₂) • Pressurelube, Inc. of New York (dc) • Protectoseal Co. (pt†) • Protea Fire Extinguisher Co. (sa) • Pyrene Mfg. Co. (af) (ff) (pt†) (sa†) (vl†B) • Pyrene Mfg. Co. of Canada, Ltd. (af†) (f) (pt) (sa) (vlB) • Randolph Laboratories, Inc. (CO₂†) (f) (pt) (sa) (vlB) • Rockwood Sprinkler Co. (f) (sa) • A. C. Rowe & Sons, Inc. (f) (sa) • Safety Fire Extinguisher Co. (f) (sa†) (vlB) • Safety First Products Corp. (dc†) • Sears, Roebuck & Co. (CO₂†) (f) (pt†) (sa) (vl†B) • D. B. Smith & Co., Inc. (pt†) • Standard Fire Extinguisher Co. (sa) • Stempel Fire Extinguisher Mfg. Co. (af) (CO₂) (ff) (pt†) (sa†) (vlB) • Stop-Fire Inc. (af) (CO₂†) (dc†) (f) (sa†) (vl†B) • Wil-X Mfg. Corp. (vlB)

Anti-Freeze

If you want to save money, you should not purchase an anti-freeze of the permanent type for your car—unless perchance you live in a high-altitude region or where temperatures go below -30°F at times. Methyl alcohol—usually available nowadays where ethyl alcohol is not—will give more than adequate protection for considerably less money. E. I. duPont de Nemours & Co. who make both permanent and alcohol anti-freezes have stated that four out of every five automobiles do not need permanent anti-freeze to obtain adequate cold weather protection. The only precaution to observe is to be sure your car has a thermostat which opens between 140° and 160° , and the vast majority of cars have thermostats which operate in this range. In some cases thermostats have been installed which operate in a higher range in order to get more heat from the car's hot-water heater. With installation of the higher temperature thermostat, it will be necessary to use a permanent anti-freeze like ethylene glycol (alcohol has a relatively low boiling point; a solution of denatured alcohol protecting to 0°F will boil at 184° at sea level).

Some may say they prefer to use a permanent type anti-freeze in the mistaken belief that they can safely use it for several seasons, and that it is cheaper than other anti-freezes. For many years CR has advised against the use of anti-freeze for more than one season, because the rust inhibitors become exhausted. Let us see what authorities have to say on this subject.

Even though an anti-freeze solution may be clear and rust-free after a winter's driving season it may have lost a large part of its inhibitor life. Leading anti-freeze manufacturers, car manufacturers, and other qualified organizations advise draining and discarding of anti-freeze solution after one winter's use. For maintaining the best possible corrosion protection and cooling efficiency the year around:

1. Install a completely fresh filling of anti-freeze in the Fall.
2. Drain the solution in the Spring.
3. Add a dosage of summer rust inhibitor to a fresh filling of water for warm weather driving.

—American Society for Testing Materials Booklet, *Selection and Use of Engine Anti-freezes*

Even the best anti-freeze should not be used the second season, for their rust inhibitors may weaken and lose their efficiency. Re-use may cause expensive repairs. Changing cooling solutions periodically

makes the same good sense as changing motor oil.

—American Automobile Association Bulletin

In order to maintain maximum protection against corrosion, drain the anti-freeze solution after one winter's use. Anti-freeze inhibitors are continually depleted by use and will eventually reach a corrosive condition.

In view of the comparative cost of anti-freeze and even of so minor a replacement part as a water pump or radiator, it is certainly cheaper in the long run to use new solutions each year. Under no circumstances should anti-freeze solution remain in the cooling system during the Summer, as its deterioration will be much more rapid under Summer driving conditions.

—National Bureau of Standards Circular 506, *Automotive Antifreezes*

Ethyl, also known as grain, alcohol is now little used as an anti-freeze, and the great majority of consumers will have to use methanol (wood alcohol). This anti-freeze has excellent properties and is more effective per quart than ethanol, but has the great disadvantage that it is extremely poisonous—much more so than most consumers realize—and is thus a much more dangerous material to handle or inhale. Methanol, when properly labeled, carries a skull-and-crossbones poison warning, is plainly marked **POISONOUS**, and is usually colored a strong violet hue to distinguish it from other anti-freeze liquids. The sound basis of purchase is on the total cost to protect the cooling system to the desired low temperature. The price per quart may not reflect this, since some brands of alcohol anti-freeze are now sold diluted with water; listings, therefore, include the percentage of anti-freeze in solution required to protect to -30°F . The careful consumer will never take the risk of purchasing an anti-freeze made or marketed by a firm whose name is unfamiliar to him, nor will he buy from an unknown or questionable dealer. Countless radiators have been ruined by the use of anti-freeze of unknown composition or origin. Such products have at times enjoyed a wide sale.

In recent years some states have adopted regulations and provided laboratory services which prevent the sale of anti-freeze mixtures of a definitely unsafe kind that may do gross harm to the engine and radiator. Such services, however, do not function with 100 percent reliability, for in one state a manufacturer—through the exercise of "influence"—was able to keep a highly deleterious calcium chloride solution on

sale and obtain a license for marketing it, even though qualified chemists employed by the state for such studies recommended against acceptance of the product. If your state is one that has official control and conducts analyses of anti-freeze solutions before they are permitted to be sold, ask for information on the laboratory findings, particularly if inclined to purchase a product about which there could be any doubt (for lack of name and address of a responsible manufacturer). The type of fraudulent and harmful anti-freeze most used consisted of calcium chloride or other salt-base material, and claims made that such substances have been inhibited to prevent corrosion of radiator and water jacket may be taken as 100 percent unreliable. Avoid any anti-freeze which consists of a solution of calcium chloride or other salt-base material *regardless of any claims that may be made for inhibition of such solutions to prevent corrosion of water jacket and radiator.*

The anti-freeze testers used by service stations, and those sold by auto accessory stores, have been found on a few tests conducted by CR not to be reliable; they are often lacking in accuracy, and are often used, too, under conditions of dirt and poor light or bad eyesight which are unfavorable to careful and correct reading of the scale of the float. It is advisable as a matter of safety to assume that the protection afforded is perhaps 10° less than what is indicated by the tester.

In the listings, the brands having an asterisk (*) have pH values and reserve alkalinities that are considered to be within ranges that are more desirable than those found for other brands. Percentage figures indicate percentage of the anti-freeze in water solution required to protect the cooling system to -30°F. (Low percentage figures correspond to higher economy, when price per gallon is the same.) For example, to protect a 4-gallon cooling system with methanol of the grade that requires a 57 percent solution and sells at \$1 per gallon would cost $\frac{57 \times 4 \times 1.00}{100}$

or \$2.28; with methanol of the grade that requires a 40 percent solution but sells at \$1.20 per gallon, cost would be $\frac{40 \times 4 \times 1.20}{100}$ or \$1.92.

Thus the methanol at \$1 per gallon is actually about 20 percent more expensive to use than the methanol at \$1.20 per gallon in this example.

The ratings that follow are based on analyses published by the State Laboratories Dept. of North Dakota. CR alone is responsible for the ratings; the ratings have not been referred to or discussed with the North Dakota chemists.

Permanent Anti-Freezes

ETHYLENE GLYCOL

Glycol anti-freezes are considered not quite so sure as denatured alcohol to be free from the possibility of causing clogging of radiators under exceptional circumstances and are therefore rated *B. Intermediate*. Moreover, leakage of a glycol anti-freeze into the engine and crankcase may result in formation of products which can cause sticking of valves and rings, lubrication failure, and serious damage to the engine if operation is continued. (Permanent anti-freeze solutions, because of their high boiling points, will remain mixed with the lubricating oil, whereas alcohol anti-freeze solutions will be evaporated from the hot oil.)

B. Intermediate

- *Atlas Perma-Guard (Standard Oil Co.)
- Allstate Permanent (Sears, Roebuck & Co.)
- *Conoco Permanent (Continental Oil Co.)
- Cities Service Permanent (Cities Service Oil Co.)
- *Ethylene Glycol (United States Rubber Co.)
- *Frigitone (Firestone Tire & Rubber Co.)
- *FoMoCo (Ford Motor Co.)
- *Hudson Permanent (Hudson Motor Car Co.)
- *K. F. Permanent (Kaiser-Frazer Sales Corp.)
- Lincoln Permanent (Ford Motor Co.)
- MoPar Permanent (Chrysler Motor Parts Corp.)
- *Mobil Permazon (Socony Vacuum Oil Co., Inc.)
- *One Fill (Pure Oil Co.)
- *Packard Permanent (Packard Motor Car Co.)
- *Peak (Commercial Solvents Corp.)
- *Prestone (National Carbon Co.)
- *Shellzone (Shell Oil Co.)
- Studebaker (Studebaker Corp.)
- Texaco P.T. (The Texas Co.)
- *U.S.I. Permanent (U. S. Industrial Chemicals Co.)
- *Wards Winter King (Montgomery Ward & Co.)
- *Zerex (E. I. duPont de Nemours & Co.)

Denatured Alcohol (Ethanol)

A. Recommended

- Saf-Tee Ethyl Type N (United Distillers of America Inc.) 54%
- U.S.I. Type N (U.S. Industrial Chemicals Co.) 59%

Menthanol (Wood Alcohol)

B. Intermediate

- *Allstate Durozone (Sears, Roebuck & Co.) 40%
- *Allstate Methanol (Sears, Roebuck & Co.) 40%
- Blue Club (Cities Service Oil Co.) 55%

- *Conoco** (Continental Oil Co.) 44%.
***Frigitol** (Firestone Tire & Rubber Co.) 41%.
***Koldpruf** (Cities Service) 42%.
***Norway** (Commercial Solvents Corp.) 44%.
Pure Sure (Pure Oil Co.) 40%.
Shell Super Strength (Shell Oil Co.) 43%.
***Standard Super** (Standard Oil Co.) 42%.
***Super Pyro** (U.S. Industrial Chemicals Co.) 41%.
Trek (National Carbon Co.) 41%.
***Varcon 188** (Gamble-Skogmo Inc.) 58%.

Other Types of Anti-Freeze

All products containing petroleum distillate (similar to kerosene or fuel oil), calcium or magnesium chloride, honey, glucose, or sugar.

Abridged Cumulative Index of Previous 1953 Consumers' Research Bulletins

Glu-Pen

MANY simple paste jobs around the home or office can be done with a minimum of mess and bother by the new *Glu-Pen*. This is an oversized "ball-point pen" about $\frac{5}{8}$ inch in diameter that deposits a dot of adhesive instead of ink, when the pen point is pressed against the paper. This adhesive sticks immediately to a second piece of paper; any that happens to be placed where it is not wanted can be rubbed off easily after it dries, as with the clear rubber cement much used nowadays in offices and homes. The little blob of adhesive that hardens on the ball point of the "pen" helps seal the reservoir against drying out and can be removed easily when needed.

Since papers joined by means of the *Glu-Pen* could usually be peeled apart, if desired, without injury to the surface, the *Glu-Pen* would be satisfactory for most temporary work. Occasionally, however, a surface layer of paper was torn off. It is not advisable to use the *Glu-Pen* on documents that are valuable or may be needed for legal or other purposes, because of the possibility of their being damaged. The *Glu-Pen* is not recommended for joining papers that are meant to adhere permanently, for the bond provided may be expected to fail in time, as ordinary rubber cement would do. A large number of papers of different kinds were fastened together using the *Glu-Pen*, and suspended over a radiator where the temperature averaged slightly over 100°F for several months. (High temperatures hastened deterioration of many adhesives.) The cement turned brown and lost all or almost all its strength on some of the papers, especially newspaper stock. The same phenomenon has often been noticed with rubber cement on paper.



After a certain time the cement changes in color and feel, and then simply "lets go." On this account, the use of an adhesive of the rubber cement type is normally limited to cases where a permanent bond is not necessary. For really lasting quality in an adhesive or paste, it is believed that one of the best materials is a library paste, such as, for example, *Paisley Map Mounting Cement 4180* (Paisley Products, Inc., 1772 Canalport Ave., Chicago 16), \$1.75 for 1 pint.

B. Intermediate

Glu-Pen (Glu-Pen Corp., 11 W. 42 St., New York 36) \$1.79 for pen and one extra cartridge of adhesive; 98c for refill of $\frac{1}{4}$ oz. (very expensive, compared to mucilage or paste). Convenient to use and avoids the messiness often associated with the application of paste, but the adhesive is of a type not considered suitable to hold papers permanently or for a long period of years. 3

What Humidity in the Home?

MOISTURE in the air is measured in terms of percentage of *relative humidity*. (Zero humidity is dry air; 100 percent relative humidity exists when the air contains all the moisture it can carry at a given temperature without depositing any as condensed moisture on a surface at the same temperature.) The humidity in an average home is rather too high than too low

during the winter; and only very rarely will the *addition* of water vapor to the air of a home be required or desirable.

High humidity is damaging in a number of ways: it will harm the walls of a house through condensation of water vapor, especially on cold, still days; with relative humidity above about 65 percent, there will be damage to clean steel

due to rusting, and the growth of rot, mildew, and mold will be fostered; damp air may cause marked bodily discomfort, besides. When the relative humidity is too low, there may be damage to furniture, as the joints and veneer are apt to come unstuck. Well-qualified medical opinion considers that there is no need for artificial humidification in homes, from the health standpoint, a position Consumers' Research believes fully warranted in view of the very low relative humidities found outdoors in many climates considered fully healthful. The accepted medical view is also that, for normal persons, a wide range of relative humidities is acceptable, and that comfort is a good guide. (Exceptions to this principle that arise strictly in the area of abnormal or disease conditions; the physician, of course, should be the adviser in all such cases.)

In very recent experiments, it was found that proper diet protected experimental animals against harmful effects on the skin caused by

extremely low humidities; it may therefore be that deficiencies of health supposedly caused by low humidity are at times manifestations of some dietary lack or inadequacy. (One prominent physician suggests that there should be high humidity indoors—45 to 85 percent, with a minimum perhaps of 25 percent—even if as a result there should be damage to the structure of the house itself. We do not consider that his position is supported in the literature and other information on this subject, which has been carefully studied by Consumers' Research over a period of several years.) From the standpoint of a house whose construction includes wood or wallboard, humidity should not be permitted to exceed about 40 percent, in ordinary cold weather; 30 percent when outdoor temperatures are between 0 and 15°; 20 percent in sub-zero weather. These values, intended to protect the house as a structure, are regarded by qualified medical men as unobjectionable from the health (physiological) standpoint.

Cigarettes and Cigarette Filters

A NUMBER of recent issues of the Journal of the American Medical Association have presented discussions of cigarette smoking and its effects, and one, that of July 4, 1953, presents a study of cigarettes, cigarette smoke, and filters done in the chemical laboratory of the Association, at Chicago. Three brands of cigarettes having filter tips were tested. Four types of materials were used in the filters: one brand used paper, and the same brand sold at a later date used fiber; filters of the two other brands were asbestos and cotton.

The poorest of the filters, using paper, removed little more nicotine than did the same cigarette without the filter. The best of the filters, one using asbestos laminated with paper, produced a reduction of nicotine content of better than one-half. Cotton filters produced some reduction; one group of samples reduced nicotine by 14 percent, another by 27 percent.

With respect to removal of tars, the paper filters produced, as with nicotine, only a moderate reduction; the asbestos filter produced reductions of 44 and 55 percent, and the cotton filter reduced the tar content about 20 percent, as it did with nicotine. It was found in respect to one brand which used a paper filter that about the same reduction would have been achieved by leaving tobacco in the cigarette instead of the

filter mouthpiece, and indeed the tobacco used as a filter was more effective in removing tars from the mainstream of smoke than the filter was.

It was interesting that two of the types of filters, those of paper and of cotton, produced a reduction of nicotine and tar content which was not considered large enough to be significant; with the asbestos filter, it turned out that a later "improved" model was much less effective than an earlier one. This came about, it is believed, in an effort to make the smoking qualities better by less tight packing of the filter material. In all cases, reports the A.M.A., the proportion of nicotine removed from the smoked portions is small.

The A.M.A.'s article explains how advertisers by using the proper stratagem and calculation can make a modest reduction of nicotine content appear to be very significant—which, though hardly news to people who write advertising copy, may be a surprise to some consumers. On the whole, consumers are wise to assume that when a cigarette advertiser makes a claim which seems to be based on scientific tests there will be more in the measurements and calculations than meets the eye and that, if the actual data upon which the claims are based are not made available to the inquirer, it would be just as well not to give weight to the findings.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines — some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Cue, Daily News (N.Y.), The Exhibitor, The Film Journal, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, New York World-Telegram & Sun, Pictorial Magazine, Release of the D.A.P. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, Time, Variety (weekly), Weekly Guide to Selected Motion Pictures (National Board of Review of Motion Pictures, Inc.).

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social problem drama
trap—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C	
—	8	3	Abbott and Costello Go to Mars...com A
—	8	1	Abbott and Costello Meet Dr. Jekyll and Mr. Hyde...com AY
1	3	2	Actress, The...dr A
—	3	1	Affair in Monte Carlo (British)...dr A
—	2	9	Affair with a Stranger...dr A
—	2	2	Affairs of Dobie Gillis, The...mus-com A
—	1	2	Affairs of Messalina, The (Italian)...hist-dr A
1	3	1	Alaskan Eskimo, The...doc-c AY
—	5	—	All American, The...dr AY
—	5	7	All I Desire...dr A
—	3	7	Ambush at Tomahawk Gap...mel-c A
—	6	9	Arena...wes-c A
1	6	7	Arrowhead...mel-c A
1	7	2	Assassin, The (British)...cri-mel A
—	3	2	Back to God's Country...mel-c A
—	1	4	Bad Blonde (British)...cri-mel A
8	9	—	Band Wagon, The...mus-com-c A
—	2	3	Bandits of the West...wes AY
1	4	—	Bear Country...doc-c AY
—	7	9	Beast from 20,000 Fathoms, The...sci AY
2	10	4	Beggar's Opera, The (British)...mus-dr-c A
1	3	3	Beautifulissima (Italian)...dr A
3	10	2	Below the Sahara...doc-trav-c AY
—	—	3	Big Break, The...dr A
—	1	9	Big Frame, The...cri-mel A
1	4	1	Big Heat, The...cri-mel A
—	6	1	Big Leaguer, The...dr AY

A	B	C	
—	1	4	Blades of the Musketeers...adv AY
1	3	—	Blowing Wild...mel A
—	9	2	Blueprint for Murder, A...cri-mel A
1	11	4	Bright Road...dr AY
—	5	5	Caddy, The...mus-com AY
—	3	1	Captain's Paradise, The (British)...com A
—	4	1	Champ for a Day...mel A
—	10	4	Charge at Feather River, The...wes-c A
—	3	2	China Venture...war-mel-c A
—	3	3	Cinderella (Italian)...mus-dr AY
—	5	—	City is Dark, The...mys-mel A
—	6	3	City of Bad Men...wes-c A
—	5	6	City that Never Sleeps, The...cri-mel A
—	2	1	Clipped Wings...war-com A
—	2	8	Column South...mel-c AY
—	5	1	Conquest of Cochise...hist-mel-c AY
—	—	3	Counterfeiters, The (Italian)...mel A
—	3	3	Cow Country...wes A
4	10	3	Cruel Sea, The (British)...nov AY
—	7	4	Cruisin' Down the River...mus-com-c AY
—	6	4	Cry of the Hunted...cri-mel A
—	10	6	Dangerous Crossing...mys-mel AY
1	14	—	Dangerous When Wet...mus-com-c A
3	6	6	Desert Rats, The...war-dr AY
—	9	8	Desert Song, The...mus-com-c AY
—	6	5	Desperate Moment (British)...mel A
—	3	3	Devil's Canyon...mel-c A
—	—	6	Devil's Plot (British)...mel A
—	3	3	Diamond Queen, The...adv-c AY
—	—	3	Doomed (Italian)...mel A
—	—	7	Double Confession (British)...cri-mel A
—	2	9	Down Among the Sheltering Palms...mus-com-c A
—	3	1	Down Laredo Way...wes AY
—	1	2	Duel Without Honor (Italian)...dr A
—	1	3	East of Sumatra...adv-c A
—	1	3	Egypt by Three (Egyptian)...dr A
—	—	5	Elizabeth is Queen (British)...doc-c AY
—	4	8	Fair Wind to Java...adv-c A
—	9	1	Fanfan the Tulip...adv AY
—	2	10	Farmer Takes a Wife...mus-com-c A
—	—	2	Fast Company...com A
—	5	5	Fear and Desire...war-dr A
2	7	7	5,000 Fingers of Dr. T, The...fan-c A
—	2	5	Flame of Calcutta...mel-c A
—	7	—	Forever Female...com A
—	1	4	Fort Algiers...mys-mel A
—	2	12	Fort Ti...war-mel-c AY
—	4	2	Fort Vengeance...mel-c AY
—	6	3	49th Man, The...mys-mel AY
—	8	1	Francis Covers the Big Town...com AY
—	—	3	Frightened Bride, The (British)...dr A
13	4	1	From Here to Eternity...war-dr A
—	4	2	Genghis Khan (Philippines)...mel A
—	2	2	Gentle Gunman, The (British)...mel A
1	8	5	Gentlemen Prefer Blondes...mus-com-c A
—	—	6	Ghost Ship (British)...mel A
—	7	8	Girl Next Door, The...mus-com AY
—	10	1	Glory Brigade...war-dr AY
—	2	6	Gold Town Ghost Riders...mus-wes AY
—	3	2	Golden Blade, The...adv-c AY
—	2	3	Great Jesse James Raid, The...wes-c AY
—	5	6	Great Sioux Uprising, The...mel-c AY
—	1	7	Guerrilla Girl...mel A
—	10	1	Gun Belt...wes-c AY
—	4	3	Half a Hero...com AY
—	1	4	Hannah Lee...wes-c A
—	1	2	Hell is Sold Out (British)...dr A
—	1	4	Homesteaders, The...wes-c AY

A	B	C		
—	13	2	Houdini.....	biog-c AYC
1	9	4	House of Wax, The.....	cri-mel-c A
—	7	1	Hundred Hour Hunt (British).....	mys-mel A
—	2	11	I, the Jury.....	cri-mel A
4	11	2	I Believe in You (British).....	mel A
1	10	4	Inferno.....	mel A
—	5	9	Invaders from Mars.....	sci-c AY
—	5	3	Iron Mountain Trail.....	wes AYC
4	4	5	Island in the Sky.....	dr AYC
—	11	4	It Came from Outer Space.....	sci AYC
1	6	1	It Happens Every Thursday.....	com A
—	1	5	It Started in Paradise (British).....	dr-c A
—	4	2	Jalopy.....	com AYC
—	4	6	Jamaica Run.....	adv-c A
1	3	3	Johnny the Giant Killer (French).....	car-c AYC
2	11	5	Juggler, The.....	dr AY
13	5	—	Julius Caesar (MGM produc- tion).....	dr AYC
—	5	1	Kansas Pacific.....	mel-c AYC
—	6	5	Keepers of the Night (German).....	dr A
—	8	1	Kid from Left Field, The.....	com AYC
—	7	5	Lady Wants Mink, The.....	com-c AYC
—	3	4	Landfall (British).....	war-dr A
—	8	2	Last Posse, The.....	wes A
1	4	7	Latin Lovers.....	mus-com-c A
—	7	2	Law and Order.....	wes-c A
—	8	5	Let's Do It Again.....	mus-com-c A
—	6	3	Lion is in the Streets, A.....	dr-c A
3	7	1	Little Boy Lost.....	mus-dr AYC
1	7	3	Lone Hand, The.....	wes-c AYC
—	5	—	Long Memory, The (British).....	cri-mel A
—	1	2	Love Island.....	adv-c A
1	7	3	Mahatma Gandhi.....	doc-biog AY
—	5	4	Main Street to Broadway.....	dr A
—	8	4	Man from the Alamo, The.....	wes-c AYC
—	7	10	Man in the Dark.....	mel A
10	7	1	Man on a Tightrope.....	dr A
—	2	1	Marksmen, The.....	wes AYC
—	4	1	Marry Me Again.....	com A
—	7	—	Marshal's Daughter, The.....	mus-wes AYC
3	7	1	Martin Luther.....	doc-biog A
—	3	1	Mask of the Himalayas.....	dr A
—	11	2	Master of Ballantrae.....	adv-c AYC
—	3	4	Maze, The.....	mys-mel A
2	7	6	Melba.....	mus-biog-c AYC
—	2	7	Mission Over Korea.....	war-mel AY
—	9	4	Mister Scoutmaster.....	com AYC
1	4	—	Mogambo.....	adv-c A
—	11	4	Moon is Blue, The.....	com A
—	2	2	Moonlighter, The.....	wes A
—	6	3	Mr. Denning Drives North (British).....	mys-mel A
—	4	6	Mr. Potts Goes to Moscow (British).....	com A
—	6	3	Murder Will Out (British).....	mys-mel A
—	3	4	Murder Without Tears.....	cri-mel A
1	4	—	Mystery Lake.....	doc-c AYC
—	5	2	Naghty Martine.....	com A
1	9	5	Never Let Me Go.....	mel A
—	3	2	Night is My Kingdom, The (French).....	dr A
—	3	6	Night Without Stars (British).....	dr A
—	3	3	99 River Street.....	cri-mel A
—	1	5	No Escape.....	cri-mel A
—	—	5	Northern Patrol.....	mel AYC
—	3	6	O.K. Nero (Italian).....	com A
—	1	5	Pack Train.....	wes AYC
—	3	3	Paris Express, The (British).....	mys-mel-c A
—	1	9	Perilous Journey, A.....	mel A
—	3	5	Phantom from Space.....	sci AY
1	8	8	Pickup on South Street.....	cri-mel A
—	6	7	Plunder of the Sun.....	mel A
—	5	8	Powder River.....	wes-c A
—	4	—	Project Moonbase.....	sci AY
2	3	—	Prowlers of the Everglades.....	doc-c AYC
11	4	—	Queen is Crowned, A (British).....	doc-c AYC
—	2	7	Raiders of the Seven Seas.....	adv-c AYC
—	—	3	Rebel City.....	wes AYC

A	B	C		
—	8	3	Remains to be Seen.....	mus-mel A
3	6	5	Return to Paradise.....	dr-c A
—	6	9	Ride, Vaquero.....	wes-c A
—	8	4	Ring Around the Clock (Italian).....	dr A
—	4	2	Roar of the Crowd.....	mel-c AYC
4	4	1	Robe, The.....	dr-c AYC
8	9	—	Roman Holiday.....	com A
2	5	5	Rome, 11 O'Clock (Italian).....	dr A
—	4	—	Run for the Hills.....	com AYC
—	3	1	Sabre Jet.....	war-dr-c AYC
—	4	1	Safari Drums.....	mel AYC
—	2	5	Saginaw Trail.....	mus-wes AY
4	5	2	Sailor of the King (British).....	nov A
—	8	8	Sangaree.....	mel-c A
—	1	7	Savage Frontier.....	wes AYC
1	10	5	Scandal at Scourie.....	dr-c A
1	9	7	Scared Stiff.....	com AYC
—	3	11	Sea Devils.....	adv-c A
—	15	1	Second Chance.....	mel-c A
—	3	1	Secret Conclave, The (Italian).....	biog AY
—	2	9	Serpent of the Nile.....	adv-c A
—	2	7	Seven Deadly Sins, The (French).....	dr A
13	4	—	Shane.....	wes-c AY
—	5	6	Shoot First.....	mys-mel AYC
—	3	—	Singing Taxi Driver (Italian).....	mus-dr A
—	5	4	Siren of Bagdad.....	mel-c AY
—	1	5	Sky Commando.....	war-mel AYC
—	1	2	Slasher, The (British).....	cri-mel A
—	1	2	Slaves of Babylon.....	hist-c AY
—	3	6	Slight Case of Larceny, A.....	com A
—	5	3	So Little Time (British).....	war-dr A
1	11	1	So This is Love.....	mus-biog-c AYC
—	3	3	Something Money Can't Buy (British).....	com A
—	4	2	Son of Belle Starr.....	wes-c A
—	—	8	Son of the Renegade.....	wes AYC
—	5	9	South Sea Woman.....	war-mel A
—	2	4	Spaceways (British).....	sci A
8	9	—	Stalag 17.....	war-com A
—	1	4	Stand at Apache River, The.....	wes-c AYC
—	3	—	Stolen Identity (Austrian).....	cri-mel A
1	7	3	Strange Deception (Italian).....	war-dr A
—	1	11	Stranger Wore a Gun, The.....	wes-c AY
—	3	6	Sun Shines Bright, The.....	dr A
—	6	1	Sweethearts on Parade.....	mus-com-c AYC
—	14	3	Sword and the Rose, The.....	nov-c A
—	7	7	System, The.....	cri-mel A
—	6	4	Take Me to Town.....	mus-dr-c A
—	4	1	Take the High Ground.....	war-dr-c A
—	1	5	Tarzan and the She Devil.....	mel A
—	3	1	Terror on a Train (British).....	mys-mel A
—	1	6	That Man from Tangle.....	mel A
—	4	2	Those Redheads from Seattle.....	mus-com-c AY
—	1	2	Three Forbidden Stories (Italian).....	dr A
—	3	1	Three Girls from Rome (Italian).....	dr A
1	11	4	Thunder Bay.....	mel-c AY
—	3	—	Thy Neighbor's Wife.....	dr A
—	4	2	Times Gone By (Italian).....	dr A
—	3	11	Titanic.....	dr A
—	8	3	Tonight at 8:30.....	dr A
—	1	2	Topeka.....	wes AYC
—	3	—	Trail of the Arrow.....	wes AYC
—	4	—	Twonky, The.....	sci AYC
—	1	4	Valley of the Headhunters.....	adv-c AYC
—	5	5	Vanquished, The.....	war-dr-c A
—	14	1	Vice Squad.....	cri-mel A
—	2	6	Vicki.....	cri-mel A
—	1	5	Village, The (Swiss).....	dr A
—	1	12	Volcano (Italian).....	dr A
2	11	1	War of the Worlds, The.....	sci-c AYC
—	1	5	War Paint.....	mel-c A
1	9	5	White Witch Doctor.....	mel-c AYC
—	6	2	Wings of the Hawk.....	mel-c AY
—	2	9	Woman They Almost Lynched, The.....	mus-mel A
3	12	4	Young Bess.....	hist-dr-c AYC
—	3	—	Young Caruso (Italian).....	mus-biog A

The Consumers' Observation Post

(Continued from page 4)

garment may require special handling. Several dynel fleece fabrics made with a cotton knit back shrank considerably in tests made by the Institute, and one coat shrank to such an extent that the lining sagged below the outside fabric.

* * *

HIGH-FIDELITY RADIO AND PHONOGRAPHS are in danger of losing their enthusiastic audience if the term continues to be abused. Audio Engineering points out that in the past the term has been limited to sets that would produce up to 7500 c.p.s. (cycles per second); while the high-fidelity set of the thirties is a far cry from the best equipment available today, the term nevertheless needs to be carefully defined. The magazine comments that it is doubtful if some of the \$19.95 phonographs currently sold as "high-fidelity" are entitled to be so labeled. An understatement, no doubt!

* * *

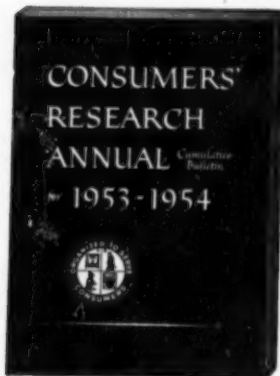
SALES OF AUTOMOBILES customarily level off after Labor Day, but even last July, according to a report in The New York Times, sales were not keeping up with shipments from the factories. In fact, one business columnist noted that in some sections of the country new 1953 cars were to be found on used-car lots at prices well below list. Consumers who are in the market for a new automobile may well be able to pick up a bargain by shopping around.

* * *

THE OLD-FASHIONED TREATMENT FOR COLDS, bed rest and liquids, has been recommended by Dr. Howard S. Traisman and Dr. L. Martin Hardy of Chicago. The two physicians reached this conclusion after a study of 159 patients

=====

Here is practical money-saving information for everybody!



CR's Annual is an excellent gift for your local library. Fully indexed for ready reference, it is reported to be a much consulted buying guide, in great demand in libraries which have already placed it in circulation.

Approach your buying problems with the aid of the scientists' expert knowledge. CR's new Annual Bulletin provides a wealth of consumer information at your fingertips. This 224-page handbook of buying contains a lot of useful advice on the purchase and care of products. It presents a summary of CR's ratings by brand name on many of the items you will buy for daily use during the year ahead. You don't need to rely on conflicting sales claims or what a friend said. Let CR's scientific tests supply a sound basis for economical purchasing. When deciding on what brand to buy, look it up in CR's big new Annual first. You will find both the Annual and CR Bulletin (monthly) effective in making your dollars go as far as possible in buying products on which you can have assurance of quality and performance.

Don't forget that Consumers' Research is a much appreciated Christmas gift. For yourself, for your friends, use the convenient order form that you will find on the next page to send in your remittance today.

=====

that were divided into three groups; one group received bed rest, fluids, and aspirin if needed; another the same treatment plus a sulfa drug; the third, bed rest, fluids, and an antibiotic. More than half of the first group got well the first week, contrasted with 39 percent of the other two groups taken together. The doctors suggested that the use of sulfa drugs or antibiotics was futile so far as curing a cold was concerned. In this view, Sir Alexander Fleming, the discoverer of penicillin, would undoubtedly concur. He was reported in an interview to have commented that penicillin was being too freely used, particularly in the treatment of common colds. In this connection the Journal of the American Medical Association has issued a warning against the casual use of antibiotic troches for treatment of infections of the throat, pointing out that there have been a number of cases of relatively severe sensitivity to such troches.

* * *

THE NEW SYNTHETIC FABRICS make wonderful advertising copy and what is known in the trade as a sales "gimmick," but there is some criticism reaching merchants' ears that consumers find the "miracle" fibers are not living up to expectations. Contrary to expectations, reports Chemical Week, synthetic fabrics require pressing with steam and heat to remove wrinkles, and it is more practical to send them to the dry cleaners than to wash them at home in certain cases. The pastel shades which are the only colors available in certain fibers are a bother to keep clean. On the other hand, the buying public shows enough interest in the new products to try them at least once.

* * *

LONG RANGE HAZARDS TO HEALTH from the ingestion of fluorine are the subject of exploration in an article by W. J. McCormick which appeared in the Archives of Pediatrics. Examination of patients who have used naturally fluoridated waters for several decades has indicated considerable periodontal disease, and effects on the bone structure, as well as severe gingivitis and pyorrhea. The author reports that a number of dental defects in the roots and tooth structure, and dental diseases have also been noted in parts of Africa and India where the natives have long used naturally fluoridated water. As protection against the toxic effects of fluorine in those sections where the drinking water has been fluoridated, Dr. McCormick recommends the daily intake of small doses of certain harmless calcium salts, such as calcium ascorbate (5 to 10 grains, for adults) which releases vitamin C; a high intake of foods rich in calcium such as milk products and leafy green vegetables; and an optimal intake of citrus fruits to provide natural vitamin C.

Consumers' Research, Inc. Washington, N. J.

Please enter my order as checked. I am enclosing my check (or money order) for \$_____

Begin subscription with _____ issue.

Name _____

Street _____

City & Zone _____ State _____

Business or Profession _____

☐ Make the above a Christmas gift.
Card to read from: _____

Please check your preference:

☐ I enclose \$2.00 (Canada & foreign, \$2.25) for a copy of the new September 1953 Annual Bulletin. Since I am a subscriber to Consumers' Research Bulletin (12 issues), I am entitled to the special rate.

☐ I enclose \$5.00 (Canada & foreign, \$5.50) for one year's subscription to Consumers' Research Bulletin monthly (12 issues) AND the new September 1953 Annual Bulletin.

☐ New ☐ Renewal

☐ I enclose \$3 (Canada & foreign, \$3.50) for one year's subscription to Consumers' Research Bulletin monthly (12 issues).

☐ New ☐ Renewal

☐ I enclose \$3.25 (Canada & foreign, \$3.50) for a copy of the new September 1953 Annual Bulletin alone.

CR-11-53

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Bach: *St. Matthew Passion*. Erb, Ravelli, Vincent, Durigo, etc., under Mengelberg. 6 sides, Columbia SL 179. \$16.35. A masterpiece of sacred music, recorded at an actual performance in 1939. Mengelberg's frequent fussing with tempi and dynamics (as in the lovely alto aria near the end of side 1, the soprano aria which opens side 2, and the concluding chorus on side 6) makes the direction less than ideal. The performers are excellent. B B

Beethoven: *Symphony No. 3*. Royal Philharmonic Orchestra under Beecham. Columbia ML 4698. \$5.45. The great "Eroica" sounds weak in this 1951 recording. Despite a lyric, transparent, though not definitive performance (an astonishingly slow *Allegro Vivace*), this is a disk I would not buy unless I wanted two "Eroicas". Nor would I buy, unless I couldn't afford more, the new \$2.98 Entre RL 3069 by the Rochester Orchestra under Leinsdorf which is a better recorded, but poorly played "Eroica." B B

Chopin: *Sonata No. 3* and three other pieces. Lipatti (piano). Columbia ML 4721. \$5.45. Nearly three years after his death, Lipatti is fully recognized as an outstanding pianist of our time and in these great Chopin compositions he clearly shows why. AA B

De Falla: *Three Corned Hat*. Orquesta Sinfonica Nacional de Espana under Argenta & Gomez: *Suite En La*. La Orquesta Sinfonica Espanola under the Composer. Montilla EL 18. \$5.95. There's unusual polish, bounce, and strength in the performance of these Spanish pieces of which the *Three Corned Hat* is the better. AA A

Handel: *Overture Suite, Aria for Two Horns, Gavotte and March*. London Baroque Ensemble under Haas. Decca DL 4070. \$2.50. Sparkling, delightful music played reasonably well and expertly recorded. A AA

Handel: *12 Concerti Grossi* (Op. 6). Bamberg Symphony Orchestra under Lehmann. 8 sides, Decca DX 126. \$19.40. Diversified, mature, effective works which represent Handel at his best. The playing is straightforward, robust, a little less aware of nuance than it should be. Columbia's older Set SL 158 with Busch offers slightly superior playing of this music but less effective recording. A A

Mahler: *Symphony No. 1*. Pittsburgh Symphony Orchestra under Steinberg. Capitol P 8224. \$4.98. Good performance, if not an extraordinary one. Greater clarity and depth would improve the recording. A B

Moussorgsky: *Pictures at an Exhibition* & **Stravinsky:** *Firebird Suite*. Philadelphia Orchestra under Ormandy. Columbia ML 4700. \$5.45. The Philadelphians play these dazzling, standard works magnificently and, praise be, never does Ormandy strain for a gaudy effect. AA AA

Mozart: *Arias from Marriage of Figaro and Concert Arias*. London (bass-baritone). Columbia Symphony under Walter. Columbia ML 4699. \$5.45. Could be even more expressive, but on the whole the performance is very satisfactory. Certainly a much wiser choice of talent than Columbia displayed in giving Eleanor Steber a group of Mozart arias on ML 4694. A AA

Mozart: *Symphonies Nos. 35 and 40*. Philharmonic-Symphony Orchestra of N.Y. under Walter. Columbia ML 4693. \$5.45. Great works in the standard repertoire. Walter's conducting is warm, congenial. AA AA

Puccini: *Highlights from La Boheme*. Certeri, Tagliavini, etc., under Santini. Cetra A 50143. \$5.95. Extracts from Cetra-Soria Set 1237 which was one of the best releases ever to come from this company, recently purchased by Capitol Records. Vastly superior to the Cetra "highlights," just issued, of *Aida*, *Cavalleria*, *Pagliacci*, *The Marriage of Figaro*. AA AA

Rameau: *Operatic Excerpts*. Vocal and Instrumental Ensemble under Boulanger. Decca DL 9683. \$5.85. Ten charming vocal and orchestra pieces by one of France's greatest 18th century composers. Excellent style in performance by French artists, but there is some vocal strain. Less than perfect, but interesting. A AA

Schumann: *Cello Concerto* & **Bruch:** *Kol Nidre* & **J. C. Bach:** *Concerto in C Minor*. Schuster (cello) with the Los Angeles Orchestral Society under Waxman. Capitol P 8232. \$4.98. Three ingratiating works from the cello repertoire. Reserved, good, and frequently excellent, performance by Schuster, who is well supported. Recording a trifle dry, close in, studio type, not widest range. A B

Vaughan Williams: *Five Tudor Portraits*. Pittsburgh Symphony Orchestra, Soloists, Chorus under Steinberg. Capitol P 8218. \$4.98. Choral Suite, recorded in actual performance. The words, fortunately, are printed on the record jacket. I admire the performance in many respects, but I am not moved by it. B AA

Wagner: *The Flying Dutchman*. Greindl, Kupper, Windgassen, etc., under Fricsay. 6 sides, Decca DX 124. \$18.50. Fine operatic set. The direction is top notch, the German cast thoroughly at home. Annelies Kupper as Senta is less than appealing, however, in her loud passages. Recording quite remarkable. A AA

Arias de Zarzuelas. Olario, Berchman, Rivadeneira, Linares (singers). Montilla LD 17. \$5.95. Eight flavor-some arias from Spanish "operettas." Very well sung except for one coloratura number. A AA

Erna Berger Sings (soprano). Decca DL 9666. \$5.85. Lieder by Brahms, Strauss. Sung with a lovely, clear, firm voice but within a narrow emotional range. Recording of voice is good, but piano wavers badly in the fifth and sixth bands of the Brahms' side. A B

Sylvia Marlowe (harpsichord). Remington R 199-136. \$2.99. Brilliant playing and recording of seven Scarlatti Sonatas (not his best), Bach's *Toccata in D*, Couperin's *Les Folies Francaises*. How much better Scarlatti sounds on the harpsichord for which he composed than on the piano is readily heard by comparing this disk with Columbia ML 4695 where Casadesu plays Scarlatti with taste and fine detail but on the piano. AA AA

Pasodobles Toreros. Gran Orquesta Espanola under de Arriba. Montilla LD 11. \$5.95. Ten quick stepping Spanish numbers played to the Queen's taste. AA A

Andres Segovia, guitar. Columbia ML 4732. \$5.42. Offered are the Castelnuovo-Tedesco *Concerto for Guitar and Orchestra* and shorter pieces by Villa Lobos, Torroba, Turina, Ponce. Segovia plays as nobly as ever, and in the frolicsome concerto Alec Sherman directs the orchestra with keen insight. AA AA